

# CONSUMERS' RESEARCH

## Bulletin



May 1949

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# CONSUMERS' RESEARCH



Vol. 23 • No. 5

## BULLETIN

May 1949

### Off the Editor's Chest

THE newest miracles of modern science, six million dollars worth of them, according to an official publicity release of the Institute of Radio Engineers, were on display at Grand Central Palace, New York City, during the 1949 Convention of the Institute early in March. As the visitor to the Radio Show walked up the last of the long flight of steps at the entrance, he came face to face with a battery of television cameras. On several viewing screens, he could see television images of himself approaching and perhaps talking to a companion. The effect was startlingly impressive, if not exactly pleasing to those who were not "photogenic," as the term goes.

The slogan of the Show was "Radio-Electronics, Servant of Mankind," but it was not finished radio or television sets as displayed in an appliance store that formed the bulk of the Show's exhibits. Radio receivers were indeed rather conspicuous by their absence from the Show; only a few television receivers were in evidence. Interest chiefly centered in new parts and materials that may appear in equipment reaching the consumer a year or more from now, and, above all, in newly-devised instruments used in the laboratories and factories where radio and television sets are designed, tested, and put into production. Loud-speakers, amplifiers, intermodulation test equipment, phonograph turntables, pickups and pickup cartridges, wire recorders, television and radar components, broadcast station and remote pickup equipment of all

sorts, germanium diodes, oscilloscopes, filters, and "wow-meters" are a few of the many items of equipment that were set up for inspection and demonstration to the visiting experts.

To the consumer whose knowledge of electronics goes no farther than plugging in a socket connection or turning the knob of a radio or television set, the show would have appeared as a confused jumble of parts and instruments; only the radio or TV hobbyist among ultimate consumers would have been aware of the interest and significance of most of the things to be seen. To the engineer and scientist, it was an excellent opportunity to get new ideas for development and improvement of electronic devices which at some future time may bring about notable advances in present communication facilities, radio, television, and sound recording and transmitting devices.

The average consumer is unaware of the enormous amount of time, knowledge, experimentation, and expense that go into the development and improvement of products that he is accustomed to take for granted. Such work is costly and often unrewarding, for an entire line of inquiry and research may prove to be a blind alley and have to be discarded completely at the end of several years' time, after perhaps hundreds of thousands or even millions of dollars have been spent in an attempt to reach a practicable, commercially useful solution. Many of the testing instruments at the IRE Show

(Continued on page 24)

**Scientific and Technical Experts and Editors:** F. J. Schlink, R. Joyce, M. C. Phillips, A. R. Greenleaf, Charles L. Bernier, and Dwight C. Aten. **Editorial Assistants:** Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; a quality judgment is independent of price; 48, 49—year in which test was made or information obtained or organized by the staff of Consumers' Research.

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\*\*\*For a brief cumulative index of 1949 BULLETINS preceding this issue, see page 28.  
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CORRECTIONS TO CONSUMERS' RESEARCH BULLETIN OF

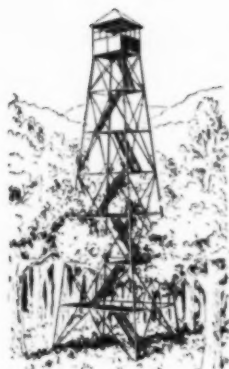
MAY 1949

Electronic Organs  
for Church and Home  
p. 18, col. 1

The last sentence in column 1, page 18, should be corrected to read: "About fourteen years ago Laurens Hammond invented an electronic organ whose tone was produced by currents induced in a coil wound on a permanent magnet by the motion at its pole face of a cusped disk rotated at constant speed by a synchronous motor."







## The Consumers' Observation Post

PRICES ARE GOING DOWN, but not as fast as consumers think they should. That is one explanation for the present refusal to buy. As one business columnist put it, "Consumers got their taste of price blood after the recent holidays and are bent on getting more. Regular prices get little attention ... and sales sag if there are no special inducements." Inability to reduce prices fast enough to meet consumer demand is no doubt the cause of many business failures in recent months, which in the New York

area are reported to be most frequent among electrical appliance dealers, food distributors, fur traders, and shoe retailers. On the West Coast, according to the American Institute for Economic Research, apparel-store liquidations are more numerous than in the East. Possibly the American Woolen Company had consumers' resistance in mind when it decided not to increase prices on worsted cloth for men's fall suits.

\* \* \*

SALT SUBSTITUTES containing lithium chloride are dangerous and should be avoided, warns the American Medical Association and the Federal Food and Drug Administration. Three deaths and several injuries have been attributed to use of lithium chloride in place of salt. The substance has been used by persons suffering from high blood pressure and other diseases and requiring a low salt intake. Insufficient testing of lithium chloride on laboratory animals was done by the government, according to Dr. Anton J. Carlson of Chicago, who charged that the drug was permitted to be placed on the market before a sufficient number of laboratory animals had been subjected to its action in toxicity tests, although it has long been known that lithium has toxic effects.

\* \* \*

FROZEN VEGETABLES are convenient to use, but they are higher in price when compared by actual weight and grade than canned or fresh vegetables. In a study made early in 1948 at Columbus, Ohio, under the auspices of the Ohio State Agricultural Experiment Station, it was found that frozen asparagus, for example, cost \$1.28 for the quantity and grade of canned asparagus that would have cost \$1, or \$1.57 worth of frozen asparagus for the equivalent fresh asparagus at \$1; the equivalent of \$1.81 worth of frozen string beans would cost \$1 as fresh beans, while it would take only \$1 worth of canned string beans to equal frozen beans at \$1.62. Taste preferences were not, however, taken into consideration. Another finding of the study was that there was little relationship between prices and grade either for fresh, canned, or frozen vegetables, but that frozen foods had a higher percentage grading top quality or "A" than was the case with the other two.

\* \* \*

TELEVISION SETS that fail to receive a listing by Underwriters' Laboratory will be considered substandard sets by the Louisiana Rating and Fire Prevention Bureau. In a recent newsletter, the Bureau points out that the picture tube circuits operate at a higher voltage than other radio circuits and hazards are thus introduced that do not exist in ordinary radio sets. The Bureau warns, however, that fires from power-pack failures have been reported, and that it is wise to pull the plug connection to any radio or television set when it is not in use. It should positively be disconnected when no one is at home.

\* \* \*

PRINTED ENAMEL-SURFACE RUGS, less expensive than linoleum, are again available, although the demand is still greater than the supply. How long they will wear depends on a number of factors that vary considerably, but most manufacturers claim that the surface is often scrubbed away rather than worn off,

according to a report in The New York Times. Since the rug is actually enamel paint on a base of felted rags or paper, its surface should be wiped off carefully using mild soap and water, never an abrasive. Such floor coverings are less resilient than linoleum and are likely to crack if they are put down during cold weather. If they are put down from wall to wall without being cemented, they should be trimmed to about one-quarter inch from the wall to allow for stretching.

\* \* \*

DIETARY DEFICIENCIES of proteins and vitamins of the B-complex family are to be considered an important predisposing cause of cancer of the mouth, according to Dr. Ian MacDonald of the School of Medicine, University of Southern California, reporting to the National Cancer Conference. Dr. MacDonald pointed out that diets high in B-complex vitamins and proteins such as meat, fish, eggs, milk, and cheese are prophylactic against the development of oral cancer and possibly cancer in general. He also noted that the average American's consumption of sugar had increased sixfold since the Civil War, with a resulting imbalance in protein, vitamin, and mineral intake. At the same meeting, another study traced a parallelism between the increase in cigarette smoking and the increase in the incidence of lung cancer in the American male during the last 20 years.

\* \* \*

THE "CURL CAPSULE" bubble has burst, reports the Drug and Cosmetic Industry. It is predicted that, as a result, the market for home permanent waves will now be greatly expanded.

\* \* \*

MORE MEAT AND DAIRY PRODUCTS in the diet is the goal of the Aiken law, the Agricultural Act of 1948, passed by the 80th Congress. An analysis of the law by Business Week lists its two important features as a sliding scale of support prices for basic farm crops, ranging from 60% to 90% of parity, depending on the size of the crop from year to year; and a new parity formula, the net effect of which is to increase the parity price of livestock and dairy products and decrease the parity price of cotton, grains, and other field crops. If farmers are going to be subsidized at taxpayers' expense, consumers will certainly get more for their tax money from a policy that encourages increased production of high-quality protein foods. Any policy of artificial price supports, however, obviously adds to the consumer's cost of living.

\* \* \*

THE UNPLEASANT SENSATION KNOWN AS "HEARTBURN" is not effectively treated by drugs, including the antacids, nor is it due to "overacidity" of the digestive system, as some suppose. It is usually caused by faulty eating habits, emotional disturbances and tension, according to Dr. Henry J. Tumen and Dr. Edwin M. Cohn of the University of Pennsylvania, writing in the Journal of the American Medical Association. Among the bad habits contributing to the distress, the physicians list eating too fast, gulping down food, washing it down with large quantities of water, overuse of carbonated beverages, and gum chewing. Sensitivity to certain foods may also cause trouble. Eating slowly and taking the meals at three regularly spaced intervals instead of taking the greater part of the daily food at one large meal a day were found to be helpful.

\* \* \*

BRAND NAMES are constantly being promoted to maintain or establish their standing in public esteem. The claim is widely circulated that branded goods are best. An observing comment was recently made on these promotional efforts in a little publication put out by Electrical Testing Laboratories, foremost appliance testing laboratory in the country, which expressed the wish that "producers would devote a tithe of the enthusiasm poured out in advocating guidance by brand names to sturdy insistence that the branded goods shall be leaders in quality." As ETL wisely points out, determination of quality can be secured only by the work of independent testing laboratories. CR subscribers know from reading the results of our many tests and reports on a wide variety of products that a respected brand name is not necessarily a criterion of excellence in quality or performance.

\* \* \*

COLORING MATTER, such as that used on oranges, in butter and margarine,

(The continuation of this section is on page 29)

## Four Television Receivers, Including a TV Kit

**T**HERE are several factors which should be taken into consideration before purchasing a television receiver. While some of the most important of these can be evaluated by test methods, there are some which must be resolved by the prospective purchaser himself before the choice can be made intelligently and with a reasonable expectation that the installation will be a satisfactory one, and that he will not soon regret his expenditure.

The first thing to be decided is the type of set desired. TV receivers are available as table models, small floor consoles, and large floor console combinations. Features available in the console combination classes include provision for reception of AM and FM broadcasts and phonograph players with provision for playing standard records, Columbia LP (33-1/3 rpm.), and RCA 45 rpm. records. In some instances, the cost may be more than \$2000 for a large combination, and it is CR's view that such an expenditure is not warranted by the present indications in the television field. Such an expenditure or even one only a quarter as large can be made with a degree of expectation that a heavy loss may be incurred due to obsolescence in the whole set or a part of it in the not far distant future. This is, of course, not peculiar to television; it is the situation that applies in any very new industry just getting into mass production. The consumers who buy in the earlier stages of production must necessarily contribute heavily to development costs and serve as a try-out audience for new and sometimes incompletely developed equipment.

The choice of size of the set, determined by that of the image tube or viewing screen, is mainly dependent upon the size of the room in which the set will be used and the number of persons it is expected will be observing the picture at one time. A small 3-inch screen, such as is used on the *Pilot Candid TV Receiver* (CR BULLETIN, March 1949) can be comfortably viewed by only one or, at the most, two persons. The much larger 16-inch tube, on the other hand, can be watched by a considerable number of people at one time. In viewing the television screens, there is a certain minimum distance, especially noticed in the lower signal strength areas, within which definition is poor due to an effect similar to grain size in a photograph. This *minimum distance* will, according to some experts, be found to be equal normally to about four times the diameter of the viewing screen. One authority,

a university teacher of ophthalmology, has indicated that the *proper viewing distance* is about 10 times the screen diameter. Thus, when viewing a 12-inch diameter screen, one would sit 10 feet from it. He also points out that the screen should be placed at eye level or somewhat below, if eyestrain is to be minimized.

A factor of importance in homes where children, for instance, may be expected to operate the set is the method used for tuning and the number of controls it is necessary to adjust to tune the receiver correctly. The usual TV receiver requires a minimum of three adjustments on the front panel, consisting of the main tuning control for bringing in the different channels, a contrast control, and a combination on-off switch and sound-volume con-



Magnavox Modern Symphony TV Receiver, Model MV-13

trol. The *Garod TV-AM-FM Receiver* reported herein utilized 10 different controls on the front panel for covering AM, FM, and TV broadcasts; such an array could be confusing even to a grown person with some experience with television receivers.

The type of antenna system to purchase cannot be determined readily. There are several points which must be taken into consideration in making such a choice, and in addition there are several so-called related phenomena which have been noticed and about which little is known at the present time; it will be difficult or impossible to explain these to the layman. For this reason, it is CR's opinion that the average purchaser will do well to leave the choice of antenna and other accessories, such as type of lead-in and need for a booster, up to the service organization which installs the set and assumes responsibility for its satisfactory opera-

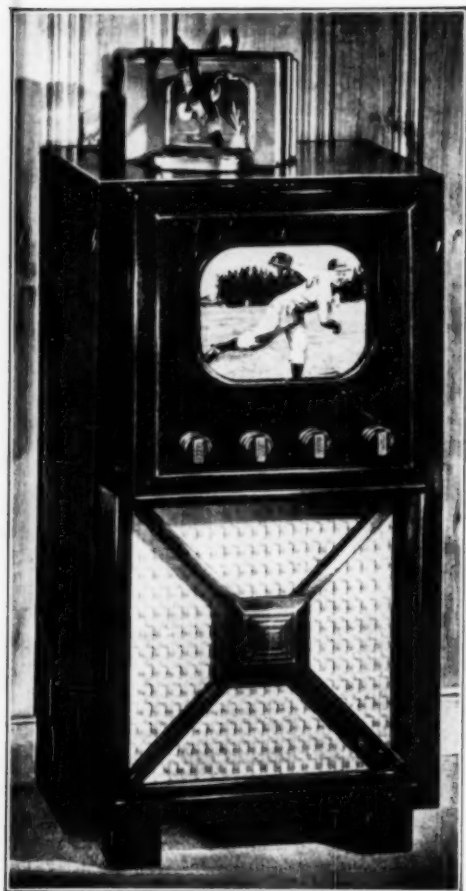
tion. It is important, however, that the purchase be made from a dealer who has been in business for some time and has a good reputation in the community for fair dealing and making good on his guarantees. He should also be one who has correct servicing facilities available for the makes of sets he sells. CR has received many letters from subscribers who purchased TV receivers from dealers of poor business standards or reliability and who later found that the dealer refused to provide needed service; the result was a considerable monetary loss to the owner, for in some cases it was necessary to sell the set at a large loss and purchase another which *could* be serviced properly in the particular area.

The audio sections of all TV receivers tested to date, in comparison to good console-model radios, have been noticeably poor with respect to fidelity of reproduction. The sound, as broadcast, is of excellent quality (the F.C.C. standards require that it be practically as good as FM broadcasts), but the single output pentodes which are being used are not capable of giving full justice to it. For this reason, some service organizations not connected with the TV set manufacturers are arranging to supply high-fidelity amplifier and speaker combinations to be used instead of those in the receiver.

Practically all TV receivers make use of 18 or more tubes and, in addition, the number of other components, such as resistors and condensers, is far in excess of the number found in the usual radio combinations; moreover the service to which they are subjected is more severe, and quality requirements are higher. For this reason service will likely be needed much more frequently than for a radio receiver or radio phonograph, and thus it is usually a good idea to purchase service for a year at the time of the original purchase and also make provision in writing for renewal of this service for a second year or as long as the particular receiver may be expected to be in use.

Thus the total monetary outlay to be expected in purchasing a TV set may run a good deal more than the initial cost of the receiver itself. In planning purchase of a set, the rather high antenna and installation cost, cost of service for a year, and possible need for a booster or other special accessories that may be installed later should all be considered in addition to the cost of the receiver itself, in deciding whether the cost is within the possibilities of one's budget.

In addition to the regular "brand name" TV receivers on the market, several manufacturers have made television kits available. The *Philmore Television Kit* reported in the listings was purchased, assembled, and tested to determine whether the assembly of such a kit might offer a considerable reduction in the cost of a TV receiver without any serious impairment in the quality of reception obtained. The circuits used and the



Admiral TV Console, Model 30A15



necessary parts were similar to those used in the RCA 630TS design with some additions and improvements, and thus the home constructor would be led to expect excellent results after the work of assembly was finished. Performance was found to be poor, however, and it is CR's view that unless the builder has access to line-up equipment (and means for learning how to apply it) such as a TV sweep generator, and an oscilloscope, he will be better satisfied by the purchase of a pre-assembled receiver, all sections of which have been correctly integrated and aligned as a unit ready to run.

As to the kit itself, that was not considered too difficult to assemble; it required approximately 16½ hours total time from the initial checking of the parts to the reception of a picture. Assembly was made by a person who had previously assembled an amplifier from a schematic drawing but who was not considered well versed in the construction and assembly of such devices. He was, however, familiar with the use of a soldering iron.

All receivers listed used the RCA tuning control arrangement which includes the synchronizing controls on the front panel, and a channel-switch-with-vernier for a station selector. Such a station selecting system is considered difficult to operate, because skill and care are needed to determine the position of the vernier at which the sound channel is correctly tuned. This system is used by a majority of the television receiver manufacturers at this time.

Ratings are cr49.

## Television Sets

### A. Recommended

*Admiral Television Console, Model 30A15* (Admiral Corp., Chicago 47) \$320, plus \$55 installation charge. 29 tubes including 10-in. picture tube. Picture size, 8½ x 6½ in. Power consumption rated at 283 watts. Workmanship, satisfactory. Cabinet finish, comparatively good. Used 13-channel selector switch which provided for reception on both lower and upper TV bands. Picture quality, considered excellent (over-all video response from antenna input to picture tube measured  $\pm 3$  decibels out to 4 megacycles). Picture stability with regard to synchronization, satisfactory. Video sensitivity (a term used to denote the ability of the receiver to pick up a weak television signal and present it satisfactorily), considered satisfactory. Audio quality was considered good when compared with other TV receivers previously reported by CR, but still left much to be desired (see text). (Audio fidelity was down about 5 db. at 8200 cycles; the speaker, 5½ in. [far too small], was probably the chief limiting factor in the quality of the audio output.) General over-all circuit design appeared to follow the widely accepted RCA design. No shock hazard in evidence in sample tested, as leakage current was negligible. 2

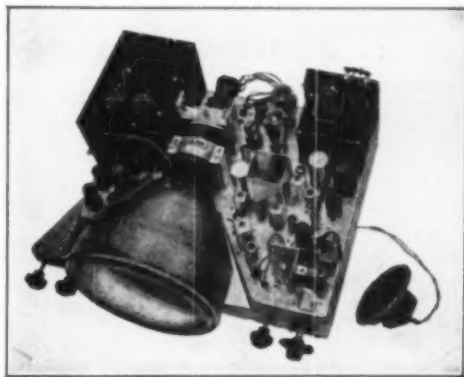
### B. Intermediate

*Garod TV-AM-FM Receiver, Model 10T21* (Garod Radio Corp., Brooklyn 1, N. Y.) \$385. 29 tubes used in-

cluding 10-in. picture tube. A table-model combination television, AM, and FM receiver in mahogany cabinet. The mask covering the viewing screen in this receiver was circular in shape and provided for a circular picture, 9 in. in diameter. For normal viewing the picture appears rectangular in shape with a ratio of sides of 4 to 3 (the conventional proportions); and in such viewing, the whole of the circular screen area is not used. Picture size approximately 6 x 8 in. An added feature, called *Tele-Zoom*, provided for expanding the central portion of the picture so that it covered the entire screen area. This obviously cuts off parts of the outer portions of the picture as transmitted. The purpose of the *Tele-Zoom* feature is to provide a close-up at a time when the cameraman in the studio feels that what the situation calls for is a long distance view. CR considers



Garod TV-AM-FM Receiver, Model 10T21



Assembled Philmore TV Kit, Model P-30

this feature to be in the gadget category; interesting, perhaps, as a novelty at the beginning, but not likely to be regarded as of permanent utility. Experiment showed that it was not possible to obtain proper focusing both for the regular image and the expanded image with the same setting of the focusing knob. Picture quality, satisfactory; over-all video response was flat  $\pm 3$  db. out to 3 mc. This is about the minimum acceptable band width; anything narrower will give progressively poorer picture fidelity as the band width decreases. Picture stability, poor to fair. Horizontal synchronizing was unstable and required considerable adjustment. Sensitivity, not measured, but appeared to be normal. Fixed adjustments were difficult to get at, and their application was made the more difficult by the *Tele-Zoom* feature. Quieting sensitivity of FM receiver, 55 microvolts at 100 mc., with limiting starting at 60 microvolts; this is regarded as fair performance. No measurements made on AM section as audio performance was not good. (The speaker used was poorly placed and mounted, and reproduction was poor.) There was a shock hazard corresponding to the excessive leakage current of 1.7 ma. **3**

*Magnavox Modern Symphony Television Receiver*, Model MV-13 (The Magnavox Co., Fort Wayne 4, Ind.) \$395, plus \$70 installation charge. 24 tubes used including 10-in. picture tube (metal-backed type 10FP4). A 12½-in. tube may be substituted without circuit changes. Cabinet quality and workmanship evidenced in the chassis were better than average. Picture size, approximately 6¾ x 8¾ in. Power consumption rated at 250 watts. Picture quality, excellent as measured (over-all video response measured out to 4 mc.  $\pm 3$  db.), and this was further confirmed by the general observation of excellent definition on test patterns and other subjects. "Magna-Lok" synchronizing control system, incorporating automatic frequency control circuits, was used and worked well. Video sensitivity, not measured, but observation indicated that its sensitivity was equal to that of the best receivers so far tested. Audio section of this receiver was one of the best so far tested. A single 6V6 pentode was used with inverse feedback which gave 1.5 watts output at 5% distortion. While this is not good enough (the single pentode output tube does not reflect good modern audio practice but is a reflection of the type

of output circuits used in table-model radios, and in low-priced consoles), nevertheless it is sufficiently better than the usual practice in television receivers in this price class that CR hopes it may indicate a new trend in manufacturing policies. Audio response was equal at 400 and 8200 cycles, indicating a flat response probably beyond the capabilities of the 10½-in. speaker used. If the manufacturer should reduce the shock hazard (leakage current, 2 ma.) present at the rear of the chassis and the vernier dial on the front panel (as can readily be done), this receiver would warrant an *A-Recommended* rating. **3**

## Television Kit

### C. Not Recommended

*Philmore Television Kit*, Model P-30 (Philmore Mfg. Co., Inc., New York 3) \$203.50 for chassis only. Cabinet extra. 30 tubes used including 10-in. picture tube. Power consumption rated at 320 watts. Picture quality, poor. The intermediate frequency channel was so badly out of line (displaced in frequency) that while a picture was obtained, the consequent reduced over-all sensitivity required very critical tuning to eliminate picture signal modulation from the sound channel. The picture was also slightly distorted on the left side. Picture stability was satisfactory. Horizontal synchronizing circuits used automatic frequency control. No measurements were made of sensitivity, but comparison with the previously tested *Dumont Chatham* indicated that the *Philmore* was comparatively insensitive, on channels 7 to 13. Channel markers on selector switch were not in line and were apparently printed in wrong places. Oscillating condition present on channel 3. In general, the findings on this receiver were such as might be expected in view of the fact that home assembly of a television set will almost never give opportunity for the equipment to be correctly "aligned," and unless the builder has access to the specialized alignment equipment required, he would have no opportunity to adjust the set as it should be adjusted. The probability of obtaining good over-all results in the building of a kit by the layman is regarded as quite low. No shock hazard, as leakage current was negligible. **3**

## Announcement of a New Amplifier

WE HAVE HAD about 100 letters from subscribers indicating their interest in obtaining information on the fixed-bias 15-watt amplifier briefly referred to in our August 1948 BULLETIN, page 31. Readers will recall that we planned to furnish such information in a form similar to that provided for the construction of the 10-watt high-fidelity all-triode amplifier.

Others who would like to procure information on the 15-watt amplifier at a charge of about \$1 are requested to send us a postcard to that effect. (If

you have already written, please do not write again.)

We do not feel that we should take the time to prepare such an article unless we know in advance that a rather large number of subscribers will be interested sufficiently to purchase the Special Bulletin; if it should turn out that several hundred desire help on the problem of a higher grade high-fidelity all-triode amplifier, we shall proceed with our plan of reproducing the material for distribution; about 4 months will be required before the Special Bulletin will be ready for mailing.



## Golf Balls—

### Report of a New Test of Twenty-Three Brands

**G**OLF BALLS have come a long way since the first ones were made over 500 years ago. It is said that the first ball was made of leather and stuffed with feathers. The modern ball has a liquid-filled, silicone ("bouncing putty"), or rubber core, around which is wound yards of rubber thread. This is protected with a tough cover that is dimpled so as to improve the flight of the ball. A smooth ball would fall to the ground after 85 to 125 yards of flight, but properly designed dimples may extend this to 225 yards or even more.

In CR's tests, 23 brands of balls were tested for those characteristics which determine their putting and driving qualities, their conformity to established standards of weight and size, and their durability.

The putting qualities of a ball were considered as being represented by the length of roll and the distribution of the balls after the test rolls. A uniform roll was given each specimen, so as to insure a constant height of fall, angle of discharge, etc., and the balls' final positions after the roll were plotted. Three factors were considered: The *roll*, or average distance traversed in 12 trials; the *variation*, or the distance between the most widely separated balls; and the *distribution*, or the diameter in inches of two circles, one enclosing 12 balls and one enclosing 10 balls, both circles having as their center the average ball position.

Driving qualities of the balls were determined by calculations of their coefficients of restitution<sup>1</sup> which were based upon measurements of rebounds from impact on a hard level surface and other data. It has been found that an increase in the value of this coefficient from 0.54 to 0.64 represented a gain of about 7 percent in "carry" or drive.

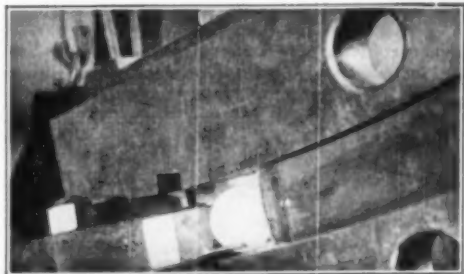
Tests were made to determine the extent to which the balls retained a permanent deformation after being distorted, and this characteristic, or

"compressive set," because it affects both driving and putting properties, was considered important in rating the balls.

The durability of the covers of the balls was judged on the basis of results from an impact test using the Charpy testing machine and impact head. This gave an indication of the energy in foot-pounds required to cut the cover or render the ball unplayable. A ball was considered unplayable when a ridge or surface irregularity sufficient to interfere seriously with putting was produced.

The durability of the covers of the particular balls is mentioned in the listings, and their thicknesses are noted when they were particularly thin or particularly thick. No weight was given to these factors in the ratings. It is recognized that while some golfers may prefer a durable ball which has fairly good driving and putting qualities, others may consider the driving and putting qualities of greatest importance.

All the brands tested were dissected to reveal their construction. There was little difference in the sizes of the balls (diameter limits are set by the U. S. Golf Association's standards). It was found that the U.S.G.A. regulation regarding maxi-



Golf ball in impact test machine used to determine durability of covers of the balls.

<sup>1</sup>Methods for Measuring the Coefficient of Restitution and Spin of a Ball. Research Paper 1624, L. J. Briggs. National Bureau of Standards, 1945.



mum weight (not greater than 1.620 ounces) was not adhered to as strictly, for of the 23 brands tested, 16 had at least one ball in a dozen overweight, and in one instance 11 of the 12 were overweight.

Ratings are based principally on test results to determine driving and putting properties and the ability of the balls to regain quickly their original spherical shape after being subjected to a compressive load. In most cases, 12 balls of the various brands were purchased and tested.

Ratings are cr49.

### A. Recommended

- Acushnet Titleist* (Acushnet Process Sales Co., New Bedford, Mass.) \$11.40 a dozen. Thin Cadwell-Geer cover; liquid-filled rubber core. Driving properties good. Putting properties fair. Compressive set less than average (desirable). Cover durability poor. **3**
- Spalding Dot* (A. G. Spalding & Bros., Chicopee, Mass.) \$11 a dozen. Cadwell-Geer cover; liquid-filled core. Driving properties good. Putting properties good. Compressive set less than average (desirable). Cover durability poor. **3**
- U.S. Royal* (United States Rubber Co., Providence, R.I.) \$11.40 a dozen. Cadwell-Geer cover; silicone-filled core. Driving properties good. Putting properties fair. Compressive set less than average (desirable). Cover durability fair. **3**
- U.S. Three Star* (United States Rubber Co.) \$11.40 a dozen. Cadwell-Geer cover; silicone-filled core. Driving and putting properties good. Compressive set about average. Cover durability fair. **3**
- U. S. True Blue* (United States Rubber Co.) \$11.40 a dozen. Cadwell-Geer cover; silicone-filled core. Driving properties good. Putting properties fair. Compressive set less than average (desirable). Cover durability fair. **3**
- Wilson K-28, Black* (Wilson Sporting Goods Co.; sold by Montgomery Ward & Co. as Cat. No. 60—4309 at \$11.40, plus postage) \$11.40 a dozen. Thin Cadwell-Geer cover; liquid-filled core. Driving properties good. Putting properties fair. Compressive set less than average (desirable). Cover durability fair. **3**

### B. Intermediate

- Acushnet Pinnacle* (Acushnet Process Sales Co.) \$6 a dozen. Solid rubber core. Driving and putting properties fair. Compressive set less than average (desirable). Cover durability good. **1**
- Wilson Flag-Hi* (Wilson Sporting Goods Co.) \$6.60 a dozen. Thick vulcanized cover; solid rubber core. Driving properties poor. Putting properties fairly good. Compressive set above average (undesirable). Cover durability good. **1**
- Acushnet Green Ray* (Acushnet Process Sales Co.) \$8 a dozen. Cadwell-Geer cover; solid rubber core. Driving and putting properties fair. Compressive set less than average (desirable). Cover durability fair. **2**

*Johnny Bulla* (Sears-Roebuck's Cat. No. 6—905; sold in Sears' retail stores) \$9.96 a dozen. Cadwell-Geer cover; solid rubber core. Driving properties fairly good. Putting properties fair. Compressive set less than average (desirable). Cover durability fair. **2**

*Kroydon Flying* (The Kroydon Co., Maplewood, N. J.) \$8 a dozen. Vulcanized cover; solid rubber core. Driving properties poor. Putting properties fairly good. Compressive set about average. Cover durability fair. **2**

*Super Scot* (Golf Ball, Inc., Chicago) \$10.20 a dozen. Thick vulcanized cover; liquid-filled core. Driving properties fair. Putting properties fairly good. Compressive set above average (undesirable). Cover durability fair. **2**

*U.S. Fairway* (United States Rubber Co.) \$8 a dozen. Cadwell-Geer cover; solid rubber core. Driving properties good. Putting properties fair. Compressive set above average (undesirable). Cover durability fair. **2**

*Wilson Lloyd Mangrum* (Wilson Sporting Goods Co., Chicago) \$9 a dozen. Cadwell-Geer cover; solid rubber core. Driving properties fairly good. Putting properties fair. Compressive set about average. Cover durability good. **2**

*Kroydon Hy-Power* (The Kroydon Co.) \$11.40 a dozen. Vulcanized cover; liquid-filled core. Driving properties fair. Putting properties good. Compressive set about average. Cover durability good. **3**

*Spalding Kro-Flite* (A. G. Spalding & Bros.) \$11 a dozen. Cadwell-Geer cover; liquid-filled core. Driving and putting properties fair. Compressive set about average. Cover durability good. **3**

*Spalding Top-Flite* (A. G. Spalding & Bros.) \$11 a dozen. Cadwell-Geer cover; liquid-filled core. Driving properties fair. Putting properties good. Compressive set about average. Cover durability good. **3**

*Wilson K-28, Red* (Wilson Sporting Goods Co.) \$11.40 a dozen. Cadwell-Geer cover; liquid-filled core. Driving and putting properties fair. Compressive set about average. Cover durability fair. **3**

### C. Not Recommended

- J. C. Higgins — 70* (Sold in Sears, Roebuck & Co. retail stores) \$7.40 a dozen. Cadwell-Geer cover; liquid-filled core. Driving properties fairly good. Putting properties poor. Compressive set above average (undesirable). Cover durability good. **1**
- Kroydon Maplewood* (The Kroydon Co.) \$6 a dozen. Solid rubber core. Driving properties poor. Putting properties poor. Compressive set above average (undesirable). Cover durability good. **1**
- U.S. Nobby* (United States Rubber Co.) \$6 a dozen. Solid rubber core. Driving properties poor. Putting properties fair. Compressive set above average (undesirable). Cover durability good. **1**
- Flying Scot plus* (Golf Ball, Inc.) \$9 a dozen. Vulcanized cover; liquid-filled core. Driving properties poor. Putting properties fair. Compressive set above average (undesirable). Cover durability fair. **2**
- British Flyer* (Golf Ball, Inc.) \$11.40 a dozen. Vulcanized cover; liquid-filled core. Driving properties poor. Putting properties fair. Compressive set about average. Cover durability poor. **3**

## Some Hints on 2,4-D



*A dandelion plant that has been treated with 2,4-D.*

Cut by courtesy of Farm Science Reporter, Iowa State College, Ames, Iowa

**D**URING the past three years, the accumulation of data on the use and characteristics of 2,4-D for the control of annual weeds under practical conditions have grown to staggering proportions. Each State Experiment Station has worked on the details of application of 2,4-D for successful weed control that are adapted to the climatic and soil conditions of its own region. In spite of all this activity in testing and publication, there are many things about the action of 2,4-D which are not yet fully understood by investigators and expert users.

Although the basic manufacturers of 2,4-D are few, the firms who repackage 2,4-D into small units are numerous. Differences in retail prices are considerable, and do not appear to reflect basic manufacturers' prices so much as the merchandisers' ideas of what prices his market will consider acceptable. In making retail price comparisons,

the consumer should always compare *like forms* of 2,4-D, that is, an ester with an ester, a sodium salt with a sodium salt, and an amine salt with an amine salt. The evaluation should also consider the percentages of 2,4-D expressed as free acid, the total volume or weight contained in the package, and the total area that can be treated by the contents of the package.

Sodium salts of 2,4-D are in a powder form; amine salts and esters are packaged as liquids. On the basis of equivalent weights of 2,4-D acid, sodium salts are slowest to kill weeds but are also least likely to damage farm crop plants. Esters are quickest to kill weeds, but, because of their volatility, are more likely to injure crop plants than any other. The amine salts occupy an intermediate position between sodium salts and esters.

For the seasons of 1946 and 1947, CR had lawn plots under test using several 2,4-D formulations

which were sold in retail outlets, and these lawn plot tests corroborated this relative speed of action. During the first few days, there was a noticeable difference between the weeds in the plots treated with the different forms, but at the end of 16 days the results were almost identical. Using the dosages as recommended on the various packages, white clover showed brown edges on the leaves, but it was not killed, and later recovered. The 1946 plots were not treated in 1947. These plots were not weed-free in 1947, although the weeds were not so numerous as before the 1946 application. They were likewise not so weedy as the control areas which had never had any applications. (There was nothing to prevent seeds from being carried onto these plots by birds, and animals, and by the wind.) The 1947 plots were treated in late summer; the grass attained a heavy growth before winter set in. In the early spring of 1948, those plots that were treated in 1947 had a clean appearance, in marked contrast to the untreated areas around them.

Sodium salts of 2,4-D are sometimes slow to dissolve. Some manufacturers suggest dissolving the salt in a small amount of warm water and then adding the additional water to make the desired dilution. Esters and amines in liquid concentrates have an advantage in convenience, in that they are quite readily mixed with water.

At the 1947 North Central Weed Control Conference, it was recommended that the labels for herbicides indicate the following information:

1. The net weight or the package contents in liquid measure.

2. Name and percentage of actual active ingredients. Inert ingredients may or may not be indicated.

3. For 2,4-D type materials, specific information should include:

- (a) The form of 2,4-D, that is: metallic salt such as sodium salt of 2,4-Dichlorophenoxyacetic acid; ester such as butyl ester of 2,4-D, or isopropyl ester of 2,4-D acid; or amine salt such as alkanolamine salt of 2,4-D acid.

- (b) For solids, the percentage by weight of equivalent 2,4-D acid. For liquids, the percentage by weight of equivalent 2,4-D acid, and especially for agricultural use, the weight of equivalent 2,4-D acid per unit of volume.

The small package purchaser should compare labels and look for all this information, since it is the basis for determining what he gets for his money. For example, if two packages each containing 8 fluid ounces of the amine salt form are compared, and one label states the amine salt of 2,4-D as free acid is 20% and the other shows that the amine salt of 2,4-D as free acid is 10%, it is clear that there is twice as much of the effective material in the first package as in the second. The dilution rate on the 20% concentrate was stated on the label as 4 teaspoonfuls per gallon of water

and on the 10% concentrate was stated as 8 teaspoonfuls per gallon of water. In 1947, two such packages were purchased, and strangely enough, the 20% package cost only 79 cents while the 10% package was priced at 98 cents or almost  $2\frac{1}{2}$  times as much per unit quantity of effective material.

The small package label should give complete directions for use. The dilution rate is usually expressed as teaspoonfuls or tablespoonfuls per gallon of water or fluid ounces per gallon of water. If solid form, the dilution rate may be expressed as ounces of material per gallon of water or as teaspoonfuls per gallon. One company packaged a solid form in small envelopes, each containing 8 grams, which was to be dissolved in 2 gallons of water. The application rate is expressed as a given number of square feet per gallon. Sometimes the total area to be covered by the total contents of the package is indicated.

2,4-D products sold last year recommended spraying when temperatures are above 60°F or on a warm day. There is some difference of opinion on the effect of temperature; some authorities believe that low temperatures cause the 2,4-D to act more slowly but that there is no effect on the end results.

Before starting weed control applications, measure the area to be treated. Then estimate the number of gallons of diluted mixture which will be needed. Follow the dilution and application rates indicated on the 2,4-D package. Either divide the area into plots and apply the recommended gallonage to each unit of area, or spray the entire area until the total gallonage has been distributed. The former method is more accurate but entails slightly more work to measure and run lines. While applying the spray, hold the nozzle about 12 inches from the plants and walk slowly but move continuously. If the spray is applied with crosswise swaths and then lengthwise until the batch is used up, a fairly uniform application will result. Most of the common lawn weeds will succumb to one application.

The common assumption that "If a little is good, more is better" does not apply at all to the use of 2,4-D; it is important therefore to follow packers' directions as exactly as possible. Early research on 2,4-D was directed along the lines of plant growth stimulation and later its killing properties at higher dosages were discovered. In the occasional cases where users have found 2,4-D to stimulate the growth rather than to kill weeds, it is possible that too little 2,4-D was applied, or that the application was carried out too rapidly for adequate coverage.

The effectiveness of 2,4-D per unit of plant growth, whether a square foot or an acre, is dependent upon the amount of actual 2,4-D acid which comes into contact with the plants. The dilution and application rates shown on small ulti-

mate consumer packages are so expressed as to make applications for small areas convenient. The recommended dilution and application rate will usually be sufficient to kill the most susceptible plants with one application, but additional applications may be necessary for more resistant plants. Annual weeds in their early and most active growth stage are considered most susceptible, while perennial weeds and mature annuals are conceded to have greater resistance. Second and subsequent applications should be spaced at 4- to 6-week intervals. (The 2,4-D disappears from the soil in approximately that length of time, although soil type will influence the life of the 2,4-D residue.)

A garden sprayer of the knapsack or tubular-tank design which can be carried over the shoulder is best for the home owner's usual small operation. Some sprayers are equipped with short and long wands. The long wand is especially useful when spraying dense foliage and tall plants, such as might be found along hedgerows and at roadsides. The newest sprayers consist of a small tank on wheels which may be pushed with ease over lawns. A small boom is equipped with three "precision" nozzles so that a relatively wide swath is covered. Some sprayers have a hood over the nozzles to minimize drifting of the spray. Application is sometimes made with a sprinkling can, but this method does not give the accuracy or uniformity which is desirable and is possible with a small low-pressure sprayer.

After using 2,4-D in a sprayer, *it should be cleaned thoroughly*, unless it is to be used with 2,4-D alone. Thorough cleaning means soaking the sprayer and all the sprayer parts in a weak household ammonia solution (1 part ammonia, 100 parts water) for several days, or rinsing the sprayer with kerosene or gasoline. It would be best, if possible, to reserve one sprayer for 2,4-D alone and use a different one for insecticides and fungicides, for even a small amount of 2,4-D left in a sprayer subsequently used for other purposes may prove disastrous to broad-leaved plants in gardens, whether they are woody or herbaceous. Several instances have been reported of serious damage because of failure to cleanse sprayers very thoroughly after use with 2,4-D.

Do not attempt weed control by use of 2,4-D in a vegetable or flower garden, even by spraying before young plants come up. Accidental damage may be done to broad-leaved plants if lawn spraying is done when there is a high wind that may carry spray drift to a considerable distance. Patience and care are the only safeguards, for the present, and use of cultivators will be necessary.

Annual weeds and shallow-rooted weeds are the ones most easily controlled by 2,4-D. Perennial weeds, which have deep and complex root systems, are more difficult to eliminate, but spot treatments to new shoots will, with repeated applications, dis-

courage these plants. This amounts to starving the plant by destroying its chlorophyll-bearing leaves where food is synthesized. The roots are storage regions; if no additional food is sent to storage, the plant can exist only until the stored foods are exhausted. This takes time.

Woody-stemmed weeds are slow to be killed out by 2,4-D. The elimination of these weeds calls for repeated treatments and the slow starvation process. For quick elimination of woody shrubs, including the shrubby form of poison ivy, ammonium sulfamate is recommended by the North Central Weed Control Conference report. This may be used as a foliage spray or as a dry salt and should be applied at the rate of 3 to 5 lb. per square yard. Ammonium sulfamate, however, is more expensive than 2,4-D. On the basis of small quantity purchases, the relative cost of treating 100 square feet was estimated to be something like 68 cents for the ammonium sulfamate and about 12 cents for an 0.2% solution of the 2,4-D.

Most weeds are at their maximum susceptibility to 2,4-D when they are growing actively. This suggests spring and early summer applications so as to prevent seed formation by the plants. Weed seeds do not all germinate at the same time. Thus spraying operations must be adjusted to the weed population of each householder's land.

It has been found that spring and summer applications to lawns will result in bare spots where weeds have been killed by 2,4-D. These are slow to fill in, but if applications are made in the fall, the grass will have a better chance to fill in the spots before weed seedlings can become established. CR's test plots for 1947 verify this generalization. However, many people like to get rid of the weeds, for appearance' sake, in the early part of the growing season and feel that the additional effort and care to get new lawn started is worth while. *Seedling lawn should not be sprayed with 2,4-D. Wait until the grass has become well established before trying to take care of the weeds.* There have been some observations that 2,4-D applications to grass immediately after mowing have a detrimental effect. It is generally conceded that the variety known as bent grass is susceptible to 2,4-D and should not be sprayed with this material. Unfortunately, unwanted grasses, classified as weeds, such as quack grass and crab grass, are very resistant to 2,4-D.

With the rapidly developing fund of knowledge concerning 2,4-D and other herbicides and with the uniformity of label information brought about by the new Federal Insecticide, Fungicide, and Rodenticide Act, the 1949 products in this field should give better results in consumer use. The agricultural uses of 2,4-D are a special problem, and the interested user should look to the publications of various state laboratories and experiment stations for information on use and application of the material for farm and truck garden purposes.



## Three Sewing Machine Accessories

THE attachments reported upon in this article have been widely advertised in many household magazines in such glowing terms as to be very appealing to any housewife with much sewing and mending to do.

Two of the devices are inexpensive wire spring gadgets, one of which is shown in Figure 1. They fit over the needle and needle-clamp; the advertising claims that they make it convenient and easily possible to darn, sew on buttons, make buttonholes, applique, do quilting, attach zippers, and overcast seams on the machine. The third accessory is a well-made attachment designed only to make almost invisible hemming stitches for curtains, dresses, etc. To attach any of the three gadgets, the regular presser foot must be removed.



Figure 1 — *Universal*, a wire spring device.

The three accessories were given use tests by an extension service engineer with long experience in the ways of sewing machines, who reported experiences as follows.

The two simple wire-spring attachments could be used with fair success for darning. If it is really desired to darn socks by machine, however, it would appear easier and simpler to use the reversing mechanism on those machines which have it, and stitch backwards and forwards over the area to be darned; then turn the work through ninety degrees and again stitch forward and backward at right angles to the first rows of stitching. On most older model machines which do not have a reverse mechanism, it is possible to stitch back and forth and sideways by loosening the pressure bar spring, thus relieving pressure on the presser foot sufficiently to make it possible to move the goods readily in any direction with the hands. If the material is held in an embroidery hoop, the operation is made considerably easier.

Although both the spring accessories were

advertised for buttonhole making, they were not practical for this use, as it was found to require much patience and practice to make good looking buttonholes with either. If a buttonhole device is desired and needed, it would be far more practical to purchase a regular attachment such as those made by the Singer and White Companies for the purpose. One of these, while much more expensive (something under \$10), will be very satisfactory, and would be a worth-while accessory for a person having a good deal of buttonhole work to do.

On the whole, neither of the spring buttonhole and darning gadgets would seem to be useful enough to warrant the expenditure of the 69 cents and \$1 charged for them.

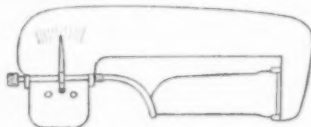


Figure 2 — *Stitch Master*, for making hems.

The third gadget tested was the *Stitch Master*, a well made, sturdy attachment, which would prove of much value to the woman who has numerous hems to put in and to change and remake from year to year. Some adjustment may be necessary to make the attachment fit the particular model machine on which it is to be used, but it was found that the gadget worked very well after proper adjustment.

The experience of people having much contact with sewing machines and their use indicates that most of the attachments offered to housewives tend to be used very seldom; the one exception is the regular buttonhole attachment already mentioned.

As the making of buttonholes is a difficult job, and as the machine-made buttonholes are better in quality generally than most of those made by hand, the buttonhole accessory is commonly given regular use. Possibly the *Stitch Master* will also come to be considered a generally useful gadget because it is also designed to do a rather tedious job which must be performed on every garment made.

Ratings are cr48.

### A. Recommended

*Stitch Master* (Stitch Master, 214-218 South Loomis St., Chicago 7) \$6.95. Designed specifically for the purpose of making practically invisible hems. Performed satisfactorily in use tests after being adjusted to fit the machine on which it was used.

### C. Not Recommended

Each of the following kits included two spring attachments, a small metal embroidery hoop with 2 elastics, buttonhole ruler, and needle threader. With the *Easy Way*,

there was also a plastic thimble. Actual use tests showed both kits unsatisfactory for making buttonholes. Satisfactory results could be obtained in darning, but other methods were judged simpler and just as effective (see text).

*Easy Way Button Hole Maker and Sewing Machine Attachment* (Western Stationery Co., Topeka, Kans.) 69c.

*Universal Sewing Machine Attachment* (London Specialties Co., 8505 Phillips Ave., Chicago 7) \$1. This was also called *Easy Way* in some advertising.

## Soil-Testing Kits

MUCH misleading information has been issued in the past in the gardening sections of some of the big newspapers and others on the consumer's need to use soil testing kits in his garden operations. A journalist writing on gardening in one big-city newspaper recently stated that there were several inexpensive kits on the market which were "critical enough for most purposes," and that no chemical knowledge was needed to make a soil reaction test.

This is contrary to the opinion of most soil technologists, who hold that soil tests, other than those for lime requirements or soil acidity, are of little value unless they are to be interpreted by an expert. Even the soil acidity tests may be included in this general statement, especially if the tests give information mainly on the pH of the soil (a means of expressing alkalinity or acidity quantitatively — a pH of 7 corresponds to neutrality, acid solutions have a pH below 7, alkaline solutions a pH above 7). This is true, because of the fact that the amount of lime required to adjust the pH of the soil to that which is favorable for various crops is determined not only by the pH of the soil, but by a chemical characteristic which is termed its "buffer capacity." Buffer capacity varies with the amount of clay and organic matter, as well as other factors, and as a rule sandy soils with less organic matter require considerably less lime to change their pH than do heavier soils with greater content of organic matter. Tests for lime requirement, however, are reasonably useful for anyone who has the means and the skill to carry them out.

In general, most of our horticultural and agricultural crops can tolerate considerable variations in soil acidity and can thrive on soils which are properly supplied with nutrients within pH ranges from 5.5 to 7.5. Certain crops, such as spinach, lettuce, cauliflower, beets, alfalfa, and red clover, require a pH from 6.5 to 7.5 for best growth, while certain others, including the blueberry, strawberry, cran-

berry, blackberry, rhododendron, holly, azalea, and many woods flowers, are able to grow in soils with a very low pH, even as low as 4.0, corresponding to a rather high acidity.

There is some difference of opinion as to whether these plants really need such a low pH value, and there are many instances in which they can be found growing on soils in the ordinary ranges of pH which are suitable for agricultural crops in general. One well-qualified expert, for example, makes the general statement about rhododendrons that they do not thrive on clay or limestone soils, and that gravelly or sandy soils with a fairly good content of leaf mold or peat are required for successful culture of this plant. He makes no mention of soil acidity, but does point out that the soil should be kept moist. CR is inclined to believe that he has included all of the major requirements, and that if these are met, it is not necessary to acidify the ordinary soil to grow rhododendrons, strawberries, blueberries, and the other crops which are mentioned as tolerant to high acidity.

It is doubtful if most home gardeners would derive much benefit from the soil testing sets which are advertised, unless the users are reasonably well informed with respect to soil conditions required for plant growth.

Instead of spending money for the buying of such a kit — and we believe the money would usually be wasted — a sample of the soil should be taken from the garden and submitted to the State Agricultural Experiment Station. In order to obtain a representative sample, it is necessary to take soil from several parts of the garden from various depths between three and six inches. The various samples should all be mixed together thoroughly and from this mixture a final sample taken for the test by the expert. The Experiment Station will then advise, in states where this service is regularly afforded, what elements are deficient in the soil and what type of fertilizer would be best to use.

## Fluorescent Lamps and Fixtures

**Editor's Note:** In the February 1947 and May 1947 issues of *Consumers' Research Bulletin* there appeared an article on fluorescent lamps, which discussed their operating principles, limitations, efficiency, and advantages and disadvantages as compared with standard incandescent lamps. *Consumers' Research* is glad now to bring further information to the attention of its readers, particularly since fluorescent lamps have come prominently into the news recently on account of the extreme hazard they have been found to involve to persons who may come into contact with bits of glass or the phosphor powder from a broken fluorescent tube (see *Consumers' Research Bulletin*, March 1949, pages 17 and 18).

**D**URING the war, we heard much of the devices which would become available in the post-war world when all of the scientific advances in war materials were applied to civilian uses. There was every reason to believe that such statements as were made would apply to light sources for use in home, office, and store.

Although a number of new lamps have been shown which promise some very interesting and worth-while applications, the fixtures have followed the general lines of pre-war lighting units.

Commercial types of fluorescent fixtures, when properly designed and constructed, are efficient light sources and offer an economic means of "pepping up" an office or store, through increased illumination and modernized treatment of the lighting system.

The question might well be raised, however, as to how the average office manager or store proprietor can recognize fixtures which are properly designed and constructed. The answer is, only through the advice of a competent authority on the subject of lighting equipment or through reliance on the representations of such groups as may have been set up to certify certain of these fixtures as complying with generally accepted industry specifications. Industrial types of fixtures bearing the "RLM" label and commercial types carrying the "Fleur-O-Lier" label give evidence of compliance with such specifications. Electrical Testing Laboratories, Inc., East End Ave. and 79 St., New York City, is the certifying agency for these, attesting to the good engineering design and regular checking or control of the appliance by tests.

Developments in fluorescent lighting have been such that up to the present time very little attention has been given to possible applications in the home. Such fixtures as have appeared on the market do not lend themselves to use other than in kitchen (or other workrooms), hall, bathroom, or possibly hobby shop or "whoopee room." The

conventional commercial fixtures just do not conform to the atmosphere of living room, dining room, or library. Portable lamps for floor or table use, with fluorescent light sources, have in the past been of crude appearance and available only at unreasonably high prices. Desk lamps using fluorescent lights have, for the most part, been subject to just criticism on one or more important points. Some attempts have been made to bring fluorescent lamps into the home through valence lighting units placed over windows; this, however, has been for decoration more than for illumination.

Many groups are at this time working on the possible use of the fluorescent lamp in domestic applications. A large percentage of the designs that have been suggested by competent engineers and architects are such that they might well enough be built into new residences, but would call for major structural changes to work them into existing homes. Little progress would appear to have been made in the design of fixtures which could be hung by the average electrician in homes of customary American designs.

In the field of portable lamps, a more hopeful condition exists as to the applications of fluorescent lamps. The circular fluorescent lamp lends itself readily to incorporation in floor and table models. Here again, however, a warning must be sounded: just because a portable lamp is equipped with one of these new circular lamps does not necessarily mean that it is a good quality product or worth the price asked. A group known as the Certified Lamp Manufacturers have prepared specifications for these and many other types of portable lighting units. These specifications are accepted and published, and lamps bearing a "CLM Label" are certified as to compliance with these requirements. Electrical Testing Laboratories, Inc., again is the certifying agency.

\* \* \*

The danger from breakage of fluorescent lamps,



of course, makes it necessary to reconsider the use of fluorescent lamps in the home. (See "Extreme Poisoning Hazard in Breakage of Fluorescent Lamps," CONSUMERS' RESEARCH BULLETIN, March 1949, pages 17 and 18; reprints available at 15 cents each.) CR believes that fluorescent lamps should not be used in places where somebody is going to sit under them or near them. If they are so used, they should be arranged so that a proper

guard is between the lamps and the person who might work close by, or at the very least, each lamp should be equipped with a small inexpensive gadget, *Flur-O-Lock* (manufactured by Laduby Co., 178-182 Oak St., New Haven, Conn., and sold for \$5.27 a hundred), two of which for each lamp act to keep the pins of the lamp tube in place in the end sockets.

## An Electric Floor Polisher

THOSE SUBSCRIBERS who have a considerable amount of floor area which requires periodic waxing and polishing will no doubt be interested in a report on an electric floor polisher, the *Vactric*.

This appliance consisted of three disk-type brushes, 4½ in. in diameter, driven by a single flat belt coupled to an ac-dc motor, all conveniently mounted in an enclosed housing. A chrome-finished handle with rubber grips was furnished for guiding or steering.

Some single- and double-disk polishing machines have a decided tendency to "walk" toward the right or left unless considerable pressure is applied at the handle; the *Vactric*, which has three brushes, did not show this tendency to any noticeable extent. It was considered to be very easy to operate, and to require a minimum effort on the part of the user. Buffing pads were supplied for attachment over the disk brushes and their use produced a pleasing sheen on a previously waxed and polished floor.

CR's tests were similar to those used previously in tests on floor polishers and floor-polishing accessories for vacuum cleaners. CR's January 1948 BULLETIN reported on a *Regina* electric floor polisher. The February 1948 BULLETIN reported on floor-polishing attachments for the *Eureka* and *Kirby* vacuum cleaners.

### A. Recommended

*Vactric Electric Floor Polisher* (Vactric Limited, Lanarkshire, Scotland; distributed by Vactric Inc., 18 E. 41 St., N.Y.C.) \$94.50, including can of liquid floor wax and hand applicator. Weight, 20.5 lb. Power input rated 240 watts (actual, 255 watts). Universal (ac dc) brush-type motor. Radio interference, not excessive, except when polisher was close to the radio receiver (direct pickup). Polishing effectiveness, very good. Ability to use the brushes alone or with polishing pads attached, an advantage. Appliance could not

polish closer than one inch to a wall or similar obstruction because of the housing which extended outside the area covered by the brushes. Passed high voltage breakdown test. Current leakage, within proper limits (less than 0.2 ma.).

3



*Vactric Electric Floor Polisher*



Courtesy Allen Organ Co.

Console of an electronic organ.

## Electronic Organs

for

## Church and Home

FOR CENTURIES the conventional musical instrument for the church has been the organ. By "organ" is meant a keyboard instrument with sets of pipes, each sounded by a current of air under control of the player. These sets of pipes produce various qualities and volumes of tone according to certain customs and standards of organ builders. The ensemble of a large organ is glorious and rich. Softer effects and solo colors abound. Naturally an instrument making available such musical complexity has the disadvantage of being very costly to buy.

In the last several years there has been developed in America a competitor similar in sound and in appearance of the keyboard to the pipe organ — the electronic organ. At first a minor contender, the electronic organ has through economic stringency become a real menace to the business of the manufacturers of pipe organs. A recent estimate indicates that there are about 20,000 electronic instruments in churches today. The tones of the better electronic organs approximate those of the mother instrument so closely that the average listener will be completely satisfied. As for cost, upkeep, and economy of space, the margin in favor of the new organs is too obvious for discussion. One thing is certain, the electronic organ is here to stay.

There are three types of electronic organs on the market at present, with five manufacturers producing in quantity. About fourteen years ago Laurens Hammond invented an electronic organ whose tone was produced by a revolving wheel set in motion by a magnet surrounded by a coil. Im-

mediately there was a favorable response. In a short time the Hammond organ was to be found in churches, radio stations, homes, restaurants, and even night clubs. As the price was around only twelve hundred dollars for small models, deficiencies in musical results tended often to be accepted or overlooked.

Without elaborating, here are some of the advantages and disadvantage of the *Hammond*. On the credit side there are these points: (1) Portability: about the weight of an upright piano; (2) Adaptability: a control cord is simply plugged into a socket; (3) wide range of dynamics and color; (4) responsiveness to the touch; (5) stays in tune; (6) low initial cost and upkeep.

On the other hand, the tone is considered by at least some well-qualified experts to lack the live qualities available in certain other makes; its imitation of actual organ sounds is not satisfactory; the initial attack when the key is depressed is a quick onrush of sound that can be irritating, when volume is great. We are informed that organists do not consider the *Hammond* as a worthy medium for the great literature of the organ.

Following the *Hammond* came a system invented by Frederick Hoshcke by which free reeds, similar to those used in the old-fashioned melodion, were set in motion electrically and amplified by a loud-speaker. This instrument, under the name *Orgatron*, was made by the Everett Piano Co. Recently the patents were bought by the Rudolph Wurlitzer Co., and the instrument now goes by the name of the *Wurlitzer* organ (not to be confused with the pipe organ this company formerly produced). Musi-

cally the *Wurlitzer* is superior to the *Hammond*. Some users report difficulties in securing service, particularly with the older models. While the tone is not equal to the traditional organ, the imitation is fair in softer music. Where the attack of the *Hammond* has tended to be unpleasantly sudden, the *Wurlitzer's* response when the key is depressed is sluggish; this makes rapid playing most difficult.

There have been three all-electronic organs brought to the marketable stage recently based on a system of securing tone by use of a vacuum-tube oscillator, introduced by Hammond in his *Nova-chord* and later *Solovox* (capable of producing only one sound at a time). These instruments are manufactured and sold by the Baldwin Piano Co., C. G. Conn, Ltd., and the Allen Organ Co. These three instruments have much in common, though there are certain differences that are of some significance.

The first of the trio was the *Baldwin Electronic Organ*. In this instrument the console is identical with that of the traditional church organ with stop keys labeled in accordance with the accepted method. Approximation to the stops of an organ is close, sometimes better than may be found in many inferior organs. The resistance of the key to the touch is the best of any electronic instrument, by reason of devices placed under each key that give the normal attack expected by an experienced organist. Of the all-electronic organs, the *Baldwin* is lowest in price. In the first full year there were about 1000 sold. At a recent convention of the American Guild of Organists a marked preference for the *Baldwin* over other electronic organs was evident.

In the *Baldwin* there are but 72 tubes. Intonation is constant but tuning adjustments are possible by means of a simple tuning wire. According to reports, servicing, except for inexpensive tube replacements, is seldom required.

When C. G. Conn came out with his electronic organ called the *Connsonata*, the organ world was interested because of advance publicity that announced an improvement over the pipe organ itself as well as other electronics. In actuality the *Connsonata* resembles the *Baldwin* in many particulars. Its action is less responsive for the skilled player. There is a lack in ensemble effect because of the absence of stops of four foot pitch (sounding an octave above normal to produce brilliancy). A coupler of four foot pitch affecting all the stops does not fill this need. The deviation in the nomenclature of stop keys from traditional names is not to be recommended. The variety of tone color is fair. The cost is much higher than for the *Baldwin*.

The *Allen* is practically a custom-made instrument, with three manuals, if specified. There are hundreds of tubes and a complexity that has a bear-

ing on the high price and the possible service requirements. Few churches would find it advisable to spend the amount of money necessary for an *Allen*, that would give them an electronic instrument at the price of a better pipe organ. A possible justification, however, lies in the space economy involved.

The electronic organs have filled a need that has been realized by many who have wished for an organ in church, mortuary, home, or studio. Struggling religious bodies now may secure an adequate instrument for worship services at a reasonable cost. Many new churches have been designed and actually built with absolutely no space for the pipes and chambers of a traditional organ. For them, the only choice is an electronic instrument. The advertised small unit pipe organs cost as much as most electronic organs, and offer far less returns musically. Many in moderate circumstances have found an electronic organ in the home possible where lack of space and price have made a wind instrument impossible. (A grand piano will cost as much or more than a *Baldwin Electronic Organ*.) For mortuaries the four-rank pipe organ is so limited in musical resonances that a far more complete electronic organ would seem definitely indicated. Some organists, including Wm. H. Barnes (author of a treatise included in the References), prefer this small organ, but the writer, also an organist with many years of experience, regards any unit pipe organ with less than six ranks as insufficient in the light of conditions.

The question that will arise in the reader's mind is this: What is the musical difference between the pipe organ and the electronic organ? Some electronic organs have approached the quality of certain pipe organ stops; notably the softer ones. In the louder effects and reeds there is something still to be desired. In the full ensemble the divergence is greatest. Here electronic instruments cannot compete with a moderate-sized or large pipe organ. The comparison may be made of supplying a string quartet with amplifiers and loud-speakers to boost the volume to that of a large orchestra. There would be the equal volume of sound but the musical result would be by no means the same.

With this situation it is obvious that unless an electronic organ will save a substantial amount of money it is a poor buy. Nevertheless, where space is limited, there is little choice. Research is bound to improve the ensemble and the detailed tonal set-up. Whether an ideal church organ can be achieved or not is for the future to reveal. Churches are advised to exert caution in the selection of an electronic organ lest they find themselves with an instrument that is neither musically satisfactory nor organ-like. For home use the electronic organ, when available at a fair price, presents an attractive musical opportunity.

All electronic organs will vary in price, depend-

ing upon the kind of amplification equipment used. In the listings, excise tax is included in the prices, which are necessarily approximate, and will vary with locality. The tax (10% of the wholesale price) is deductible for religious and non-profit educational institutions.

#### A. Recommended

*Baldwin Electronic Organ* (The Baldwin Piano Co., Cincinnati) Regarded as the best value; musically satisfactory; construction simple and practical; installations appear to be expertly done. Standard price for a 40-watt output installation, \$3150 (this price will vary depending upon the type of amplification equipment used). 1

*Allen Electronic Organ* (The Allen Organ Co., Allentown, Pa.) Approximate price: one manual, \$1575; two manuals, from \$3850 up to about \$15,000. Made to order only. Far greater complexity than in other electronics. Musically excellent. 3

*Connsonata* (The Conn Band Instrument Co., Elkhart, Ind.) Considered less satisfactory for the player, in musical quality, than the *Allen* and the *Baldwin*. Greater complication in its assembly. Priced high for the product. The *Connsonata* standard model formerly, and possibly now, sells for \$4300. One *Connsonata* dealer, however, has said that that particular model of *Connsonatas* is being sold for \$3600 (100-watt-output installation). There is a smaller model two-manual *Connsonata* that sells for \$2700. This *Connsonata*, it is believed, is equipped with a 25-note pedal board rather than the standard 32-note. 3

#### B. Intermediate

*Hammond Organ* (Hammond Instrument Co., Chicago)

Best adapted for secular places and for use with popular music. Considered by many to be unsuitable for church or home use. Cost relatively low. Easily moved. Standard 40-watt installation, \$2367 (40-watt installation with less elaborate speaker, \$2230). There is also a cheaper substandard model. 1

*Wurlitzer Organ* (The Rudolph Wurlitzer Co., North Tonawanda, N. Y.) Somewhat lacking in range of musical color. Slow of action. Best in soft sustained music. New model two-manual console which includes a new vox celeste and great-to-pedal coupler, \$3900 (40-watt installation). 1

#### References

Readers who intend to purchase an electronic organ may secure detailed technical information, free from bias, in the following essays obtainable in most libraries:

The Contemporary American Organ — Wm. H. Barnes (J. Fischer & Bro., N.Y.C.)

The Evolution of Electricity in the Organ — Dean Rowland W. Dunham (The Etude, December 1947, page 680).

A recent article, Electronic Organs, by Dr. Alexander McCurdy in The Etude of January 1949, presents an excellent argument in favor of electronic instruments by an eminent organist. In the Journal of the Acoustical Society of America, Volume 20, No. 4 (July 1948), there is a short item on the subject. Winston Wells in Design of Electronic Organs discusses the *Hammond Organ* in Audio Engineering, September 1948.

## Door-to-Door Selling of High-Priced Utensils

SEVERAL MARKETERS of stainless steel utensils are reported to be selling two-quart saucepans at a price as high as \$15 to \$16. Such a price, of course, bears no reasonable relationship to cost of production and of marketing through normally efficient channels; it rather reflects an exceedingly high commission to salesmen, probably an abnormally high rate of profit to the manufacturer, or rather, the merchandiser or distributor. The same situation applies to utensils that are commonly sold in sets by canvassers, and sets of kitchen utensils which are specially marketed by high-pressure salesmen with assertions that they are exceptionally adapted to "waterless cooking," and that such use of special utensils is practically indispensable to give the family its proper share of

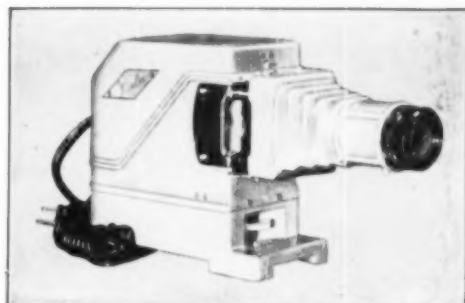
needed vitamins and minerals. Marketing in this way through door-to-door salesmen will invariably carry a heavy load of selling expense, and the items will be unreasonably priced (whereas the purchasing of utensils in sets *ought* to give the customer an advantage, due to the lower distribution cost which should apply when a set rather than single utensil is purchased). If tempted to buy in this way, be sure to consider *cost per average utensil* before deciding, and then make it a point to see what an approximately equivalent utensil of the same material would cost you if you were to buy it in a department store or home-furnishing store. And don't believe the salesman if he tells you, as he often will, that the brand he is selling is made of some unusual, secret, or unique metal or alloy.

## Photographic Equipment

### Slide Projectors

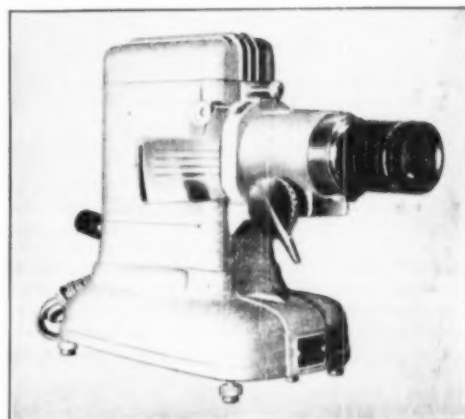
#### B. Intermediate

*Viewlex*, Model AP-5 (*Viewlex, Inc.*, 35-01 Queens Blvd., Long Island City, N. Y.) Projector, \$49.75; case, \$7.45. Designed for slides with outside dimensions of  $2\frac{3}{4}$  in. x  $2\frac{3}{4}$  in. or  $2\frac{1}{2}$  in. x  $2\frac{1}{2}$  in. An adapter for 35 mm. or *Bantam* size film mounted in 2 in. x 2 in. slides is available at \$4.95. Equipped with f:3.5 *Luxtar* anastigmat lens of 5-in. focal length (maker's name not shown), 150-watt lamp, heat-resistant glass plate, and double condenser. No slide carrier; each successive slide is pushed out by the following one, an arrangement judged less convenient than a good carrier. Lens was satisfactory for 35 mm. frame but size of flat field not quite sufficient to cover  $2\frac{3}{4}$  in. x  $2\frac{3}{4}$  in. frames. Ratio of illumination between corners and center, 40% (relatively poor performance). Illumination in lumens (average foot candles multiplied by screen area in sq. ft.), 260 (fairly good). Ventilation was judged adequate. Although evenness of screen illumination and lens performance would not be likely to be satisfactory to a critical user, some users might find the projector satisfactory for home projection.



*Viewlex*, Model AP-5

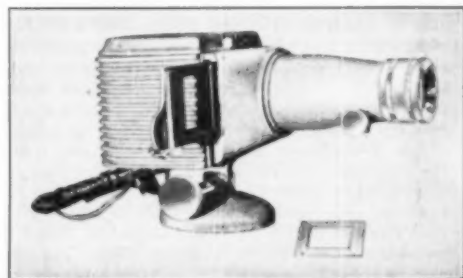
*T.D.C. Vivid*, Model RP (*Three Dimension Co.*, Chicago) Projector, \$82.20; case, \$8.50. Designed for slides with outside dimensions of  $2\frac{3}{4}$  in. x  $2\frac{3}{4}$  in. or  $2\frac{1}{2}$  in. x  $2\frac{1}{2}$  in. For projection of 2 in. x 2 in. slides, a slide carrier at \$7.50 and a rear condenser lens at \$5 are available. Equipped with f:3.5 coated *Trionar* anastigmat lens of 6-in. focal length, 300-watt lamp, heat-resistant glass plate, and triple condenser. A quiet and vibrationless fan provided adequate cooling. Performance of lens, mediocre; field was not flat; sharpness, although probably adequate for home use by not-too-critical users, would be unsatisfactory for auditorium use where a large screen image would be necessary. Ratio of screen illumination between corners and center, 55% (relatively poor). Illumination in lumens (average foot candles times screen area in sq. ft.), 600 (good). For home use, 300-watt illumination was more than was needed. Model RO at \$69.70 was essentially the same as Model RP except that RO was not equipped with a cooling fan.



*T.D.C. Vivid*, Model RP

#### C. Not Recommended

*Diamant Master*, Model D-1 (*Diamant Products Co.*, 41 W. 24 St., New York 10) Projector, \$59.50; case, \$10.95. Designed for  $2\frac{1}{2}$  in. x  $2\frac{1}{2}$  in. slides; also 2 in. x 2 in. when inserted in metal slides which were provided. Equipped with f:4.5 coated *Dianastigmat* lens of 8-in. focal length (name of maker not shown); 150-watt lamp; and double condenser. Performance of lens unsatisfactory; field was far from flat, and showed severe

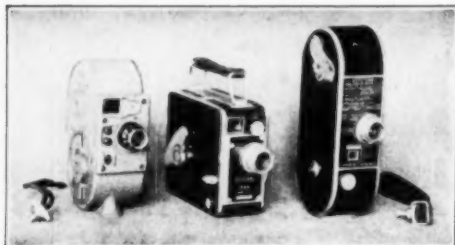


*Diamant Master*, Model D-1



color-fringing. Ratio of screen illumination, corners to center, 70%, but in spite of this relatively favorable ratio, illumination was found to be grossly uneven, with light and dark areas. Illumination in lumens (average foot candles times screen area in sq. ft.), 130 (poor). Slide carrier was simple and rugged but did not hold slide firmly in position, whence picture was easily thrown out of focus. 2

## Motion Picture Cameras, 8 mm.



Left to right — Bell & Howell Companion; Keystone Magazine, Model K-40; Keystone, Model K-22.

### B. Intermediate

**Bell & Howell Companion** (Bell & Howell Co., Chicago) \$89.80 including federal excise tax. Equipped with Bell & Howell Anate f:2.5 coated lens, focal length 12.5 mm., in fixed-focus mount. Uses standard double-8 film rolls. Simple mounting provided easy interchangeability of lenses. Rated shutter speeds of 8, 16, 24, and 32 frames per second. Quality of lens, good, judged equivalent to that of Mylar lens on B. & H. *Filmo Sportster* (CR Bulletin, Dec. 1946). Motor ran about 5 ft. of film for each full winding, shutting off automatically and positively when rewinding was required, with no tendency to slow down. Camera was easy to load; closing the door closed film gate. Workmanship very good, but finish not as fine as that of similar *Sportster* model. 2

**Keystone Magazine, Model K-40** (Keystone Mfg. Co., Boston) \$116.50 including federal excise tax. Equipped with Wollensak *Cine Raptar* f:2.5 coated lens, focal length  $\frac{1}{2}$  in., in fixed-focus mount. Uses standard Eastman Kodak 8 mm. magazine. View-finder adjustable for lenses of  $\frac{1}{2}$ , 1, and  $1\frac{1}{2}$  in. focal length, but when set for 1 and  $1\frac{1}{2}$  in. lenses, was not satisfactory as there were reflections from shiny interior surface of view-finder. Rated shutter speeds of 8, 16, 24, and 64 frames per second. Motor ran about 7 ft. of film for each full winding, but slowed down somewhat near end of run. Definition of lens noticeably better than that of the supposedly identical lens on the *Keystone K-22* and as good as any Wollensak f:2.5 thus far tested. Operated smoothly. Construction, very good. Considered about equivalent in quality to *Revere Magazine*, Model 70, reported in CR Bulletin, February 1948. The same camera is available with f:1.9 lens in focusing mount (not tested by CR) at \$145.50 including tax. 2

### B. Intermediate

#### (At a Lower Level of Performance)

**Keystone, Model K-22** (Keystone Mfg. Co.) \$67.50 including federal excise tax. Equipped with Wollensak *Cine Raptar* f:2.5 coated lens, focal length  $\frac{1}{2}$  in., in fixed-focus mount. Uses standard double-8 film rolls. Rated shutter speeds of 12, 16, and 48 frames per second. View-finder was provided with masks for use with 1 and  $1\frac{1}{2}$  in. focal length lenses. Definition of lens poorer than that of supposedly same lens on *Keystone K-40* but it was not possible to determine if fault lay with lens or with its adjustment on camera. It was difficult to load film properly so that it would not jam. Workmanship judged mediocre. The same camera is available with f:1.9 lens in focusing mount at \$99.50 including federal excise tax. 1

## Roll-Film Camera



Voigtländer Bessa

### A. Recommended

**Voigtländer Bessa** (Distributed by Willoughby's, Inc., 110 W. 32 St., New York 1) \$185 including federal excise tax. Used No. 120 roll film to make 8 pictures  $2\frac{1}{4} \times 3\frac{1}{4}$  in. or 16 pictures  $1\frac{1}{4} \times 2\frac{1}{4}$  in. (Sizes named are nominal.) Equipped with *Heliar* f:3.5 lens of 105 mm. focal length (lens not coated). Focusing from 3.5 ft. to infinity by movement of entire lens. *Compur Rapid* shutter with rated speeds of 1/400, 1/200, 1/100, 1/50, 1/25, 1/10, 1/5, 1/2, 1 second, and bulb. Delayed-action device gave a delay of about 11 seconds. Coupled range-finder of superimposed-image type with separate windows for focusing and viewing. Both range-finder fields were colorless; use of different colors would have been an improvement. Lens quality of sample tested, excellent; judged equal or superior to the best pre-war lenses tested by CR of the same speed and focal length. Shutter speeds were approximately proportional and action was comparable with pre-war *Compur* shutters of the same size. View-finder and scale were both accurate. Camera was well made. 3

## Twin-Lens Reflex Camera

### B. Intermediate

*Voigtlander Brilliant* (Distributed by Willoughby's, Inc.) \$115 including federal excise tax. Used No. 120 roll film to make 12 pictures each  $2\frac{1}{4} \times 2\frac{1}{4}$  in. Equipped with f:3.5 *Skopar* taking lens of 75 mm. focal length; focusing lens f:2.2. Lenses are geared together by means of deep knurlings on their mounts and focus from 3.5 ft. to infinity. There was some tendency to bind; this type of construction is considered less desirable than that used on *Rolleiflex* and *Ciroflex* in which entire front of camera, carrying both lenses, is used in focusing. Had *Compur* shutter with rated speeds of 1/300, 1/100, 1/50, 1/25, 1/10, 1/5, 1/2, 1 second, time, and bulb. Image was viewed on a planoconvex lens having a ground spot on its plane surface for focusing; folding magnifier, colored yellow, in hood, presumably to reduce glare. Hood also had suitable lenses, front and rear, to serve as a direct-vision finder. Body of camera, plastic (considered less desirable than metal). First frame of film required positioning by observation of number through conventional red window; subsequent frames by observation of a dial provided with automatic stop and manual release. Quality of lens, fair, approximately equal to that of lenses on *Ciroflex* and *Anso Automatic Reflex*. Shutter speeds were approximately proportional. 2



*Voigtlander Brilliant*

## The New Columbia and Victor Records

MANY of our subscribers are interested in the new Victor records which quickly followed the Columbia LP records on the market. The Columbia LP records are played at 33-1/3 rpm. and have a playing time per side up to 25 minutes. The new Victor records are played at an entirely different speed from any previous records — 45 rpm. They are not long-playing records, but have a playing time up to about 5 minutes per side.

Both Columbia's LP's and Victor's 45's are pressed on vinylite, which has a much lower noise level than the shellac composition usually used for records. Vinylite records, however, do have a certain characteristic click that can be heard from time to time, and some of the new Victor records show a background noise or hiss similar to that which is heard on shellac records.

Both the Columbia LP and the new Victor records should afford higher fidelity than has been usually available hitherto. Columbia appears to have somewhat the edge in this respect, but this is only a tentative opinion since the problem of the player and of variation from record to record must

also be considered. The fidelity of the new Victors is believed to be better than Victor's 78 rpm. records, but whether it is better than the *best* shellac records on the market is yet to be established.

It is understood that 33-1/3 rpm. records will also be produced by Vox and Mercury and 45 rpm. by Capitol and Capitol-Telefunken. All future releases by Victor will be offered at both 45 and 78 rpm.

It is, of course, impossible to give our readers at this early date an adequate appraisal of the relative quality of the two systems, for at the time this note was written, there were only a few Victor records available, and there were as yet no commercial high-fidelity playing systems available to test their response characteristics.

Victor's present player is an ingenious and compact device which sells for \$24.95. Its performance mechanically seems very good, and it works rapidly and quietly. It has a large center spindle  $1\frac{1}{2}$  inches in diameter and on that account as well as because of its 45 rpm. speed cannot be adapted to

(Continued on page 28)



## Off the Editor's Chest

(Continued from page 2)

were custom-made and necessarily involved large outlays of money, up to several thousand dollars each, but through the use of some of them, engineers will find methods for working out the design of a finished ultimate-consumer product so that it can be made by an assembly-line technique and sold to users at prices that will seem reasonable and practical. A piece of equipment of which one specimen may cost ten thousand dollars today may at some future time, after much study and instrumentation, be practicable to design for mass-production and mass-marketing at two or three hundred dollars — yet a million dollars or several million dollars may be tied up in the equipment which made its final design and low-cost production possible.

One of the most interesting developments at the IRE Show, and one that promises to be of great interest to consumers, were the most modern magnetic tape recording systems. There were several makes of these operating at frequent intervals so that it was possible to make comparative listening tests of their respective performances. One which attracted particular attention and seemed outstanding for its ability to give high-fidelity reproduction was the *Magnecord*. The successful operation of such devices depends upon a considerable number of interrelated factors: the tape itself, which must be produced at moderate cost and be easily handled without breaking or tangling; an efficient driving mechanism to feed it at very constant speed; a high-fidelity amplifier specially adapted to the characteristics of the magnetic record in the tape; a high-fidelity speaker system able to reproduce a wide range of frequencies at a great range of volume without undue distortion or resonances.

Indications are that this type of recorder will soon make it possible for the smaller radio stations in remote areas to provide musical reproductions of top quality, practically as good as would be produced if the original symphony orchestra, chorus, or individual singers were present in the city where the broadcasting station is operated. This high-quality tape recording equipment is far too expensive, and involves too much in the way of knowledge, and skilled handling at the present time for the average home, but it does lend itself for use by numerous individual FM and AM radio stations throughout the country whose listeners hunger for music of Philharmonic Orchestra quality, far better recorded than could be done by means of sound film, phonograph records, or other accepted

means. With the super-quality tape recorders, the fidelity of the musical reproduction can greatly surpass the quality now available on "platters" or in music "piped in" to the local station over telephone lines (the method customarily used for feeding big-city and Hollywood broadcast programs to remote points).

The equipment shown at the IRE Show indicated quite clearly that television-set manufacture is considerably in advance of the potentialities for test and evaluation of the completed products. (It has often happened that the engineers, from Edison's phonograph on, produce effective working designs before the scientists provide the means for their critical comparison and evaluation.) The television industry has done a remarkable job, but its instrumentation still has a long way to go, and until that is firmly established, it is impossible to say that television receivers have settled into clearly defined and dependable patterns of design and production.

The IRE Show furnished a remarkable demonstration of the contribution of the American system of free enterprise to the development of scientific progress. Many exhibits of great interest and value were shown by comparatively small companies making and selling a limited number of highly specialized and intricate devices and instruments. The man on the street will not even know of the existence of the companies nor of the apparatus which they are working on; he will never see their advertising, for it will not be found in the home magazines with national circulation figures in the millions. If they issue any, it will consist of diagrams and technical descriptions useful only to engineers and scientists, yet the work which they do will appear, perhaps years from now, in the radio and television sets which the average man uses or in the broadcasting stations which provide him with radio and television entertainment.

Whether the different companies and laboratories achieve success will depend upon how effectively they have analyzed the needs and gauged the future trend of development in the industry they are striving to improve, and what acceptance is accorded that particular industry's products by the specialized technically-trained consumers who have use for their designs. The ingenuity and variety of their offerings was an indication that private initiative, which has been an important factor of our mass production of an almost endless variety of consumers' goods, still flourishes; that the small

producer still can compete effectively; can perhaps by sheer brains and initiative develop a practical monopoly of design and quality in his field as against huge firms of great financial power.

The Show was so crowded with visitors (outsiders had to pay \$3 for admission) that there was no wish on the part of the Institute to have a larger audience, but it would be fine if something equivalent to it might be provided to permit visits from members of high school science and vocational classes, and so correct some of the harm which has been done by social studies teaching, much of which has given students the feeling that solutions of difficult technologic problems are chiefly arrived at by verbal techniques, by mere alertness or shrewdness, rather than the slow and painful processes of the laboratory and drafting room.

There has been an unfortunate tendency in the last decade (much deplored by scientists and engineers) for the schools to substitute social studies, or methods of thinking about science for the more rigorous disciplines in chemistry, physics, mathematics, shop and drafting room skills, needed to provide the future engineer or scientist or businessman of exceptional responsibility with the solid foundation he must have to achieve success in today's complex technological world. While a number of the exhibits at the Show would have been beyond the understanding of students at the high school level, and often beyond the appreciation of college students without training in the physical sciences, even a brief tour of inspection of such a fine array of mechanical and electrical developments would have given them an appreciation of the complexity and scope of the knowledge involved in today's intricate mechanical inventions; an appreciation, too, that it is not politicians or thinkers or social theorists who must be depended upon to

solve the problems implied in the wide use of such complex entities.

Perhaps either the IRE or some of the largest companies in the communications field may in future make provision for providing inspiration of college and high school teachers and students to a higher level of scholarship by setting up exhibits of this general sort in at least the largest cities throughout the country and encouraging visits by considerable numbers of high school and college students in the sciences. At the present time there is too great a gap between the things which the scientist knows and does, and those which can be seen and understood by those who support his work. Such a situation is not healthy. Instead of a few hundred thousand people who understand the methods of work of scientists, there should be at least some millions, in order that our system may not only support science generously, but understand the need for and the value of what it is supporting, and understand also what sort of conduct and ideas, care, responsibility, and fine workmanship it may expect from trained scientists and engineers.

In no country in the world but the United States could such an exhibition have been presented, in such great detail, and with such amazing strength and variety of new invention and development. Only a competitive enterprise system, unhappily gone from most of the rest of the nations of the world, can give birth to and foster the astonishing developments exhibited by manufacturers under the auspices of the Institute of Radio Engineers. Not government agencies, but free men of science and technology working in a voluntary self-supporting association of their own, are the ones who produce and organize the marvels of the IRE's Annual Radio Show.

## Corrections and Emendations to Consumers' Research Monthly Bulletins

Boosters for  
Television Sets  
Pages 17-18  
Feb. '49 Bulletin

The *Anchor* Radio TV Pre-Amplifier, Model 101-50, is available from Sun Radio Co., 124 Duane St., New York City, at a net price of \$22.50.

Gas Stoves  
Page 9  
Mar. '48 Bulletin

The manufacturer, Caloric Stove Corp., advises that the stove formerly manufactured by them under Model No. 5428, priced at \$147.75, has been discontinued, and that the new model number is 6428. Model 6428 is substantially the same stove as No. 5428 except for changes in minor details and convenience features, not of a sort that would significantly affect efficiency. (List price

was increased to \$171.25 to \$182.25, depending upon locality, without accessories.)

Men's Shoes  
Page 13  
Col. 1, 2  
Nov. '48 Bulletin

The A. E. Nettleton Co., Syracuse 2, says that the *Nettleton Footemates*, No. 451, rated *B. Intermediate* and purchased in a Nettleton shoe store in New York City, were not made by their company. According to Nettleton, the shoes in question were manufactured by the John Foote Co., Brockton, Mass., and purchased from that firm by the Nettleton Co. in order to supply Nettleton retail stores with shoes in a price range not available in the Nettleton line.



# Ratings of Motion Pictures



THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

*Box Office, Charm, Chicago Daily Tribune, Cue, Daily News (N.Y.), The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety (weekly), Weekly Guide to Selected Motion Pictures (National Board of Review of Motion Pictures, Inc.), and Unbiased Opinions of Current Motion Pictures* which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure  
biog—biography  
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)  
car—cartoon  
com—comedy  
cri—crime and capture of criminals  
doc—documentary  
dra—drama  
fan—fantasy  
hist—based on historical incident  
mel—melodrama  
mus—musical  
mys—mystery  
nov—dramatization of a novel  
rom—romance  
soc—social problem drama  
trav—travelogue  
war—dealing with the lives of people in wartime  
wes—western

A	B	C	
—	14	3	Accused, The..... <i>cri-mel A</i>
1	10	6	Act of Violence, An..... <i>war-mel A</i>
—	10	5	Adventures of Don Juan..... <i>adv-c A</i>
—	2	5	Affairs of a Rogue, The..... <i>hist-dr A</i>
—	3	1	Alaska Patrol..... <i>mel AYC</i>
—	8	6	Alias Nick Beal..... <i>fan A</i>
—	3	4	Angel in Exile..... <i>mel A</i>
—	1	8	Angel on the Amazon..... <i>dr A</i>
—	7	7	Angry God, The..... <i>dr-c A</i>
1	11	1	Apartment for Peggy..... <i>dr-c A</i>
—	1	3	Appointment With Murder..... <i>cri-mel A</i>
—	3	3	Arkansas Swing, The..... <i>mus-com AYC</i>
—	2	2	Back Streets of Paris..... <i>mel A</i>
—	3	3	Back Trail..... <i>wes AYC</i>
3	6	3	Bad Boy..... <i>dr AYC</i>
—	6	2	Badmen of Tombstone..... <i>wes A</i>
—	4	8	Belle Starr's Daughter..... <i>wes A</i>
—	2	1	Bells of the Old City..... <i>com-c A</i>
—	2	1	Blondie's Big Deal..... <i>com AYC</i>
—	3	5	Blondie's Secret..... <i>com AYC</i>
10	5	2	Blood on the Moon..... <i>wes A</i>
—	6	2	Bomba, the Jungle Boy..... <i>adv-c AYC</i>
—	3	3	Borrowed Trouble..... <i>wes AYC</i>
—	2	3	Boston Blackie's Chinese Venture..... <i>cri-mel AY</i>
—	7	8	Boy with Green Hair, The..... <i>fan AYC</i>
—	7	6	Bribe, The..... <i>cri-mel A</i>
—	2	3	Brothers in the Saddle..... <i>wes A</i>
—	1	6	Bungalow 13..... <i>mys-mel A</i>
—	7	1	Canadian Pacific..... <i>mel-c AY</i>
—	5	2	Canterbury Tale, A..... <i>dr A</i>

A	B	C	
—	2	13	Caught..... <i>dr A</i>
—	6	1	Cesar..... <i>dr A</i>
1	4	—	Champion..... <i>mel A</i>
—	13	4	Chicken Every Sunday..... <i>com A</i>
—	4	3	Chips Are Down, The..... <i>nov A</i>
—	4	4	City Across the River..... <i>cri-mel A</i>
—	3	5	Clay Pigeon, The..... <i>mel A</i>
—	5	4	Code of Scotland Yard..... <i>cri-dr A</i>
4	11	1	Command Decision..... <i>war-dr AY</i>
—	7	1	Connecticut Yankee in King Arthur's Court, A..... <i>mus-com-c AYC</i>
—	5	7	Corridor of Mirrors..... <i>dr A</i>
—	3	7	Countess of Monte Cristo, The..... <i>mus com A</i>
—	7	3	Cover Up..... <i>dr A</i>
—	1	5	Creep, The..... <i>mel A</i>
—	3	3	Crime Doctor's Diary, The..... <i>mys-mel AY</i>
—	5	9	Crisis Cross..... <i>cri-mel A</i>
2	12	3	Cry of the City..... <i>mel A</i>
—	11	2	Dark Past, The..... <i>cri-mel A</i>
—	1	5	Daughter of the Jungle..... <i>adv AYC</i>
—	1	2	Dead Don't Dream, The..... <i>wes AYC</i>
—	3	9	Decision of Christopher Blake, The..... <i>dr A</i>
—	1	2	Denver Kid, The..... <i>wes AYC</i>
—	3	1	Desperadoes of Dodge City..... <i>wes AYC</i>
—	2	1	Devil's Daughter..... <i>dr A</i>
1	3	2	Don't Take It to Heart..... <i>com AYC</i>
3	11	1	Down to the Sea in Ships..... <i>mel AY</i>
—	7	3	Dulcimer Street..... <i>dr A</i>
—	2	5	Dynamite..... <i>mel AY</i>
—	3	5	Eagle With Two Heads, The..... <i>dr A</i>
—	6	3	Easy Money..... <i>com A</i>
—	1	2	El Dorado Pass..... <i>mus-wes AYC</i>
—	3	5	El Paso..... <i>wes-c A</i>
—	3	9	Enchantment..... <i>dr A</i>
—	4	4	Eternal Husband, The..... <i>dr A</i>
—	11	5	Every Girl Should Be Married..... <i>com AY</i>
—	4	4	False Paradise..... <i>wes AYC</i>
—	11	5	Family Honeymoon..... <i>com AYC</i>
—	4	1	Far Frontier, The..... <i>mus-wes-c AY</i>
—	4	4	Feathered Serpent, The..... <i>mys AY</i>
—	11	4	Fighter Squadron..... <i>war-mel-c A</i>
—	1	4	Fighting Back..... <i>mel AYC</i>
—	9	3	Fighting O'Flynn, The..... <i>nov-c AY</i>
—	2	8	Flaxy Martin..... <i>dr A</i>
—	3	3	Foolish Husbands..... <i>com A</i>
—	8	9	For the Love of Mary..... <i>mus-com AY</i>
—	6	8	Force of Evil..... <i>cri-dr A</i>
—	5	2	Four Steps in the Clouds..... <i>com A</i>
—	6	6	Gallant Blade, The..... <i>mel-c AYC</i>
—	2	8	Girl from Manhattan, The..... <i>com AY</i>
—	1	3	Golden Eye, The..... <i>cri-mel AY</i>
—	4	1	Grand Canyon Trail..... <i>mus-wes AYC</i>
—	6	2	Green Promise, The..... <i>dr AYC</i>
—	2	3	Gun Smugglers..... <i>wes AYC</i>
—	4	4	Gunning for Justice..... <i>wes AYC</i>
—	6	6	Harpoon..... <i>mel A</i>
—	13	1	He Walked By Night..... <i>cri-mel A</i>
—	6	2	Henry, the Rainmaker..... <i>com AYC</i>
—	2	1	Her Man Gilbey..... <i>com A</i>
—	3	3	Hidden Danger..... <i>wes AYC</i>
—	4	5	High Fury..... <i>dr A</i>
—	3	1	Highway 13..... <i>mel A</i>
1	11	4	Hills of Home..... <i>dr-c AYC</i>
—	2	1	His Young Wife..... <i>dr A</i>
—	1	4	Homicide..... <i>cri-mel A</i>
—	2	4	Homicide for Three..... <i>mys-mel Y</i>
—	4	1	I Am With You..... <i>dr AY</i>
—	1	3	I Cheated the Law..... <i>cri-dr A</i>
—	5	1	I Shot Jesse James..... <i>mel A</i>
—	4	6	Impact..... <i>cri-mel A</i>
—	4	2	Incident..... <i>mel AY</i>
—	5	1	Indian Agent..... <i>wes AYC</i>
—	4	4	Inner Sanctum..... <i>mys-mel A</i>

A	B	C
—	5	Interlude.....dr A
—	2	It Always Rains Sunday.....dr A
—	2	Jiggs and Maggie in Court.....com AYC
—	1	Jigsaw.....dr A
8	8	Joan of Arc.....dr AY
—	12	John Loves Mary.....com A
2	14	Johnny Belinda.....dr A
—	5	Joe Palooka in The Big Fight.....mel AY
1	11	June Bride.....com A
—	4	Jungle Goddess.....dr AYC
—	2	Jungle Jim.....mel AY
1	8	Jungle Patrol.....war-mel A
—	5	Just William's Luck.....com A
—	7	Kidnapped.....mel AYC
—	5	Kiss in the Dark, A.....com A
—	5	Kiss the Blood off My Hands.....cri-mel A
—	9	Kissing Bandit, The.....mus-com-c A
1	6	Knock on Any Door.....cri-mel A
—	3	Ladies of the Chorus.....mus-com A
—	6	Last Bandit, The.....wes-c A
—	5	Last of the Wild Horses.....wes-c A
—	2	Last Stop, The.....war-dr A
—	3	Leather Gloves.....mel A
—	4	Let's Live a Little.....com A
—	15	Letter to Three Wives, A.....dr A
1	5	Life of Riley, The.....com AYC
1	4	Little Women.....dr-c AYC
—	4	Loaded Pistols.....mus-wes AYC
—	1	Long Wolf and His Lady, The.....cri-mel A
—	4	Long is the Road.....propaganda-dr A
5	8	Louisiana Story.....mus-doc AYC
—	3	Lovers, The.....dr A
—	1	Lovers of Casanova.....mus-dr A
—	10	Luck of the Irish, The.....fan AYC
—	2	Lucky Stiff, The.....cri-com A
1	3	Macbeth.....dr AY
—	6	Man About the House, The.....mel A
—	10	Man from Colorado, The.....wes-c AY
—	2	Manhattan Angel.....mus-com AY
—	3	Mark of the Lash.....wes AYC
—	2	Marshal of Amarillo.....wes AYC
—	3	Merry Chase, The.....com A
—	6	Mexican Hayride.....com A
—	2	Million Dollar Weekend.....mus-mel A
—	7	Miranda.....com A
—	2	Miss Mink of 1949.....com A
—	13	Miss Tatlock's Millions.....com A
—	1	Mlle. Désirée.....dr A
1	8	Monsieur Vincent.....dr A
—	3	Monte Cassino.....war-dr AY
—	2	Moonrise.....dr A
—	10	Mother is a Freshman.....com-c AYC
—	2	Mozart Story, The.....mus-dr A
—	10	Mr. Perrin and Mr. Traill.....dr A
—	2	My Brother's Keeper.....mel A
—	3	My Dear Secretary.....com A
—	3	My Dream Is Yours.....mus-com-c A
—	4	My Own True Love.....war-dr A
—	5	Night Time in Nevada.....mus-wes-c AYC
—	7	No Minor Vices.....com A
—	1	Old-Fashioned Girl, An.....mus-dr AYC
—	3	One Night With You.....mus-dr AY
—	4	One Sunday Afternoon.....mus-com-c A
—	7	One Touch of Venus.....mus-fan A
—	2	Outcry.....war-dr A
—	3	Outlaw Brand.....mus-wes AYC
—	1	Outpost in Morocco.....mel A
—	14	Paleface, The.....mus-com-c A
—	1	Parole, Inc.....cri-mel A
—	3	Piccadilly Incident.....war-dr A
—	4	Place of One's Own, A.....mys-dr A
—	1	Plot to Kill Roosevelt, The.....cri-mel A
—	6	Plunderers, The.....mus-wes-c A
1	7	Portrait of Jennie.....dr-c A
—	3	Prejudice.....propaganda-dr A
—	6	Quartet.....dr A
—	6	Quiet One, The.....doc-dr A
—	2	Racing Luck.....dr AYC
—	5	Rangers Ride, The.....mus-wes AYC

A	B	C
—	8	1 Red Canyon.....wes-c AYC
—	8	6 Red Pony, The.....dr-c A
2	8	5 Red Shoes, The.....mel-c AY
—	2	2 Red Stallion in the Rockies.....dr-c AY
—	11	5 Return of October, The.....com-c A
—	3	2 Ride, Ryder, Ride.....wes-c YC
—	8	7 Road House.....mus-mel A
—	8	5 Rogues' Regiment.....war-mel A
—	3	3 Room Upstairs, The.....dr A
—	1	7 Rose of the Yukon.....mel AYC
—	3	Rossini.....mus-biog A
—	4	3 Rusty Leads the Way.....dr AYC
—	2	5 Ruy Blas.....hist-dr AY
—	3	1 Saraband.....hist-dr-c A
—	1	2 Secret Mission.....war-mel A
—	3	3 Secrets of a Ballerina.....dr A
—	3	1 Shep Comes Home.....dr AYC
—	2	4 Sheriff of Wichita.....wes AYC
—	5	5 Shockproof.....mel A
—	4	4 Silver Trails.....mus-wes AYC
—	1	4 Singin' Spurs.....mus-wes AYC
—	2	1 Sinister Journey.....wes AY
—	1	9 Siren of Atlantis.....fan A
—	2	2 Sleeping Car to Trieste.....cri-mel A
—	7	3 Slightly French.....mus-com-c A
—	1	7 Smart Girls Don't Talk.....cri-mel A
—	2	1 Smoky Mountain Melody.....mus-wes AYC
—	2	2 Smugglers' Cove.....mel AY
4	8	8 Snake Pit, The.....mel A
—	4	4 Snowbound.....dr A
2	11	4 So Dear to My Heart.....mus-car-c AYC
—	2	1 Son of God's Country.....wes AYC
—	2	3 Song of India.....mel AYC
—	1	3 Sons of Adventure.....mys-mel AY
—	4	1 S.O.S. Submarine.....war-doc AY
—	8	6 South of St. Louis.....wes-c A
—	5	5 Spirit and the Flesh, The.....nov A
—	6	5 State Department—File 649.....mel-c A
—	1	3 Strange Gamble.....wes AYC
—	6	6 Strange Mrs. Crane, The.....cri-mel A
—	2	4 Street Corner.....dr A
—	3	3 Streets of Laredo.....wes-c A
—	5	2 Strike It Rich.....dr A
—	7	2 Sun Comes Up, The.....mus-dr-c AYC
—	1	2 Symphony of Life.....mus-dr-c A
1	9	4 Take Me Out to the Ball Game.....mus-com-c AYC
—	2	2 Take My Life.....mys-mel A
—	1	4 Tale of the Navajos.....doc-c AYC
—	6	5 Tarzan's Magic Fountain.....fan AY
—	7	8 That Wonderful Urge.....com A
—	1	11 This Was a Woman.....dr A
—	11	9 Three Godfathers.....wes-c A
2	9	4 Three Musketeers, The.....dr-c AY
—	1	2 Thunder in the Pines.....mel A
—	2	3 Tragic Hunt.....dr A
—	3	3 Triggerman.....wes AYC
—	1	7 Triple Threat.....dr AYC
—	2	2 Trouble Preferred.....mel A
—	3	2 Troublemakers.....com AYC
—	3	1 Undercover Man, The.....cri-mel A
—	9	7 Unfaithfully Yours.....com A
—	2	3 Unknown Island.....dr-c A
—	3	6 Untamed Breed, The.....wes-c A
—	1	4 Valiant Hombre, A.....mel AYC
1	9	4 Wake of the Red Witch.....adv AY
—	5	2 Walking Hills, The.....wes A
—	2	2 Wandering Jew, The.....dr A
—	3	4 Waterloo Road.....war-dr A
—	1	2 Wench, The.....dr A
—	2	4 What's on Your Mind.....doc A
—	1	3 When Love Calls.....mus-dr A
—	12	4 When My Baby Smiles at Me.....mus-com-c A
—	5	8 Whiplash.....mel A
1	11	5 Whispering Smith.....mel-c AY
—	3	3 Without Prejudice.....dr A
—	2	7 Woman in the Hall, The.....dr A
—	1	8 6 Words and Music.....mus-mel A
—	12	4 Yellow Sky.....wes A
—	14	2 You Gotta Stay Happy.....com A



## The New Columbia and Victor Records

(Continued from page 23)

use of other records with smaller center holes. The new changer would not seem satisfactory for use with high-fidelity playing systems because the mechanical design and construction are not sufficiently precise and elaborate to give very steady rotational speed and to prevent rumble from being heard in quiet passages of the music. High-fidelity pickups and changers will be available for Victor records in the reasonably near future, and the price for the new unit is expected to be somewhere around \$85 to \$150, depending upon whether or not a case is furnished.

For the present, it would appear that as between the Columbia LP and Victor 45, the new Victor system is to be preferred for brief musical selections to be played with a changer. The Columbia LP system seems preferable for the long compositions which make up about 20 percent of the sales and are of primary interest, perhaps, to musicians and music lovers.

While it is too early by far, as we said in our March 1949 BULLETIN, to find a record player and pickup which will satisfactorily provide for playing records at all of the three speeds (33 1/3, 45, 78) now being offered by the large producers, such a unit will undoubtedly become available. We must warn our readers that not everyone who is going to produce such a unit is going to produce a good one the first time, and even the second and third of the makes that are to be offered may not be a successful device in the long run, even if it is one that is sold at a rather high price.

In the meantime, it is obvious that the success of the new Victor and Columbia records will depend to a considerable degree upon how well Victor and Columbia and their licensees produce the new records—that is how skillfully they record and how carefully they press inspect the product. Consumers' Research will report on new developments in subsequent issues.

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		*Indicates that listings of names or brands are included.	

# The Consumers Observation Post

(Continued from page 4)

may be the cause of allergic skin eruptions, according to Food Field Reporter, summarizing a speech by Dr. R. L. Mayer of Summit, N. J., before the American Academy of Allergy. Various amino-azo dyes used not only in foods, but also in cosmetics, and in the treatment of clothing, leather, and paper may, in Dr. Mayer's opinion, be the offending agents.

\* \* \*

WHEN IS SOAP NOT SOAP, and how can the consumer tell? The confusion in the average homemaker's mind as to what is a soap product and what is a synthetic detergent was the subject of a caustic editorial in Soap and Sanitary Chemicals early this year. As the editor pointed out, neither the purchaser nor the storekeeper can tell from a brand name such as "Buzz," "Rippo," "Fluffy Suds," "Bell," "Cleanso," or "Whirl" just what the product is. The effectiveness, amount to be used, and the kind of job for which a particular product is best suited will vary according to the nature of the product and its ingredients. The magazine suggests that the makers of various cleaning products put some identifying classification on the carton so that consumers can make their selection more intelligently.

\* \* \*

HOUSE FLIES have been successfully controlled in the last year or two by the use of DDT sprays. Now pest control operators and farmers report that DDT is no longer so effective as when first used. Experts who have looked into the matter have discovered that over the 3-year period a strain of flies has been evolved which has developed a high resistance to DDT. Entomologists at Rutgers University, however, suggest also that 1948 may have been an exceptionally good year for flies and that perhaps the reason for the apparently poor performance of DDT sprays was that they were carelessly used, or that spraying was not thoroughly done.

\* \* \*

POTATOES are not so popular a vegetable as they once were, and the present trend is still downward, according to Kris P. Bemis, secretary of the potato

The wise consumer may place his order NOW

for

**CR's 1949-50 Annual Cumulative Bulletin.**



● Although the 1949-50 Annual Cumulative Bulletin will not be off the press before September 1949, an order placed now can be entered, processed, and the wrapper addressed, ready to enclose and mail the Bulletin just as soon as the ABC is available.

● This 200-page book is known as the consumer's handbook of buying. As those who have used it in previous years can testify, it is a handy compilation of CR's listings carefully indexed for ready reference that has enabled many subscribers to save much more than its modest price by following its advice in many fields. In addition to ratings of products by brand name that have been previously tested by CR, the Annual Cumulative Bulletin presents much new material that has not appeared in any previous CR Bulletin.

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division of the United Fresh Fruit and Vegetable Association. Mr. Bemis ascribed this decline in popularity to lack of good quality and the fact that too many potatoes are marketed in dirty and spoiled condition.

\* \* \*

THE "VIENNA PROCESS," a system of treatments by X-ray for removal of superfluous hair and facial blemishes, was the subject of investigation by the St. Louis Better Business Bureau some months ago. The firm, Keat Salon, Inc., was reported by the Bureau to be part of a chain system with headquarters in Chicago. Rates varied from \$5 to \$30 a treatment, up to \$400 for a course of treatments. The Better Business Bureau received complaints from customers that the treatments did not remove hair permanently, as advertised, nor did they eliminate facial blemishes. Finally the Federal Food and Drug Administration seized the X-ray device on the grounds that if it were not competently operated it would endanger patrons' health, and that it was not properly labeled with adequate directions for use and warning against unsafe dosage. As CR subscribers know, we have for some years listed as C. Not Recommended X-rays as a method of removing superfluous hair.

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#### RECENTLY TESTED:

Lyn-X Cream Polish (Acme White Lead & Color Works, Detroit), \$3.48 per gal.; pint size retails at 69¢ and 1/2 pt. at 39¢. A thick white liquid sold "for fine furniture, polishes bone dry," recently analyzed, was found to contain 1% of a sulfated surface active agent (soap substitute), 68% water, 14% mineral oil, 6% glycerol and triethanolamine, 10% Stoddard Solvent (a high flash point petroleum naphtha of a kind much used for dry cleaning), 1% water soluble gums. The composition of the product would indicate that it should be satisfactory for its purpose; in practical use it was found to perform very well.

Kellems Kandle Grip Candlesticks (Kellems Co., Saugatuck, Conn.), \$2.95 per pair, silver or gold finish. Made of composition material on felt-bottom base, with a specially-designed gripping feature inserted between base and rim which holds candles securely in place. The gripping device consisted of a novel spring arrangement. When the upper ring of the candlestick is pushed down, the spring expands somewhat so as to increase in diameter; when the rim is released, the spring contracts again, and so grips the base of the candle. The grips were tested in CR's laboratory and worked satisfactorily on a variety of candles. The candlesticks were convenient to use and held the candles correctly and firmly in place. Hot wax drippings from the candles appeared to have no adverse effect on the finish and were easily removed. The general appearance was good. The product was considered to warrant an A-Recommended rating.

## Consumers' Research, Inc. Washington, N. J.

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# PHONOGRAPH RECORDS

BY WALTER GRUENINGER

Please Note: In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended. Although nearly all new releases of serious music are heard, space narrows selection, generally, to sets which merit high ratings.

## ORCHESTRA

**Bartok: Concerto for Orchestra.** Pittsburgh Symphony Orchestra under Reiner. 12 sides, Columbia Set 793. \$7.30 Initial recording of a less severe, vital, major Bartok work. Forceful, revealing performance. Live, coarse recording with strings too faint. Short measure on several sides. The LP pressing (ML 4102, \$4.85) offers higher fidelity.

Interpretation AA  
Fidelity of Recording B

**Debussy: La Mer.** L'Orchestre de la Suisse Romande under Ansermet. 6 sides, English Decca Set 88. \$7.35. Three impressions of the sea, among Debussy's finest compositions. Magnificent performance and recording topping every competitor, though breaks of sides 1 and 2 are unwisely chosen and side 1 lacks the pearly tone of the others.

Interpretation AA  
Fidelity of Recording A

**Liszt: Les Préludes.** Stokowski and His Symphony Orchestra. 4 sides, RCA Victor Set 1277. \$2.50. Melodramatic, popular tone poem. Nearly as good as Jorda-English Decca Set 54 (\$5.25). Both performances keep the lurid aspects in hand, Stokowski a little more so. Resonant, wide range recording in both instances, with Decca offering more bass. Victor's side 1 surface is noisy. . . . The envelope, substituted for an album, reduces the price a dollar but increases the risk of breakage. Suggestion: insert a 12-inch square of cardboard in the envelope. Victor promises many more sets will be released in this manner.

Interpretation AA  
Fidelity of Recording A

**Milhaud: Le Boeuf sur le Toit.** Minneapolis Symphony Orchestra under Mitropoulos. 4 sides, Columbia Set MX 308. \$3.10. Rowdy, satiric work in one movement based on Brazilian folk music. Later used for a pantomime set against an American speaksy. Animated, assured performance recorded coarsely. The LP pressing (one side of ML 2032 — \$3.85) reveals percussion effects scarcely audible on the standard pressing and offers more quiet surfaces. Yet, the coarseness remains. Particularly impressive on the LP pressing is the continuous playing.

Interpretation AA  
Fidelity of Recording B

**De Falla: The Three Cornered Hat — Suite 1.** National Symphony Orchestra under Jorda (4 sides) & Suite 2 (3 sides) & **Moussorgsky: Khovanstchina — Prelude** (1 side). London Symphony Orchestra under Jorda. English Decca Set 60. \$9.45. Precise, controlled performance of engaging Spanish dances which I prefer played with more abandon. At times, hall reverberation is excessive, losing detail.

Interpretation A  
Fidelity of Recording A

## VOCAL

**Brahms: Alto Rhapsody.** Kathleen Ferrier (contralto) with the London Philharmonic Orchestra and Choir under Krauss. 4 sides, English Decca Set 69. \$5.35. Melancholy music known to record collectors by Marian Anderson's recordings, the latest: RCA Victor Set SP 13 (\$2.75). Miss Ferrier sings intimately, Miss Anderson majestically. Both performances, like the recording, are excellent though the very loudest passages on Decca's side 4 sound distorted. Less surface noise on Decca.

Interpretation AA  
Fidelity of Recording A

**Verdi: Rigoletto — Arias and Duets.** Lina Pagliughi (soprano), Alexander Sved (baritone). 10 sides, Cetra-Soria Set 109. \$10.20. The important Gilda and Rigoletto arias. Pagliughi's limpid, girlish voice carries off the honors, in my mind, though her type of singing may displease some. Sved's lack of dramatic punch and the muffled quality of his voice prevent unqualified endorsement but in many respects he is fine. Satisfactory, "three dimensional" recording, not widest range. Quiet surfaces.

Interpretation A  
Fidelity of Recording A

**Polyphonic Masters of the XVI Century.** Sung by the 1948 Graduating Class of the Gregorian Institute (Toledo) under Dom Erwin Vitry. 8 sides, Gregorian Institute Set PM 1. \$7.65. Interesting selections by Palestrina, Josquin Després, Orlando di Lasso and others. Sung with reverence, if not with de luxe finish. Satisfactory recording but it is too loud and lacking somewhat in range and transparency. Nearly inaudible surfaces.

Interpretation A  
Fidelity of Recording A

**Verdi: Aida.** Canigusa, Gigli, Stignani, Bechi, Tajo, etc., and the Chorus and Orchestra of the Rome Opera under Serafin. 2 vol., 40 sides, RCA Victor Set 1174. \$27. One of the greatest operas. The level of performance ranks higher than you are likely to hear in this country. Gigli, past "Celeste Aida," is relatively secure. Caniglia flirts a few high ones but appropriately she is authoritative and fiery. Distinction, for the most part, marks the singing of Stignani, Bechi and Tajo. Serafin conducts with understanding. The recording is full, powerful, well balanced. The weakness — a shortage of high frequencies — is not serious where the voices are most important. Side 35 is overcut making it necessary to push the stylus, in one instance, into the next groove. Other minor shortcomings exist but they fail to detract seriously from this rather remarkable operatic set.

Interpretation A  
Fidelity of Recording A

## CONCERTO

**Dvorak: Concerto in A Minor** (Op. 53). Ida Haendel (violin) with the National Symphony Orchestra (GB) under Rankl. 8 sides, English Decca Set 77. \$9.45. Brahmsian, lyric work with an especially engaging "Allegro Gioso." Brilliant performance by the soloist who gets adequate support. Wide range, resonant recording.

Interpretation AA  
Fidelity of Recording A

## LIGHT AND MISCELLANEOUS

**Barber Shop Harmony.** The Sportsmen Quartet. 6 sides, Capitol Set CC 137. \$3.15. Well blended, light textured singing of "Down By the Old Mill Stream," "When You Wore a Tulip," and other nostalgia.

Interpretation AA  
Fidelity of Recording A

**Gypsy Airs.** Marina Koshetz (soprano). 6 sides, RCA Victor Set S 55. \$3. Superior cafe style singing. Smooth recording of voice but orchestral accompaniment is faint.

Interpretation AA  
Fidelity of Recording A

**Songs to Remember.** Peter Yorke and His Orchestra. 8 sides, Columbia Set C 178. \$3.42. Plenty of curlicues and English schmalz in these arrangements of "Sleepy Lagoon," "Intermezzo," "Love Here is My Heart" etc. Pleasant for lighter, sentimental moments. Spacious recording.

Interpretation AA  
Fidelity of Recording A

